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THE CAUSES AND TREATMENT OF CHRONIC BACKACHE

WITH A CONSIDERATION OF THE DIAGNOSIS OF SACRO-ILIAC "RELAXATION"

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BOSTON

That chronic backache, or chronic lameness in the back, is a frequent occurrence is a matter of common information to the medical profession, to the laity and to the manufacturers of patent medicines. The laity, as a rule, attributes such backache to "kidney disease" in men, and to that or to uterine disease in women. The writings of the medical profession on the subject have not led to a clearing up of the matter, and many confusing statements are to be found.

The more common of the various names given to this symptom-group are a sufficient comment on the situation. They are as follows: neurasthenic spine, hysteric or irritable or railroad spine, chronic lumbago, uterine backache, static backache, relaxation of the sacro-iliac joint, sacro-iliac strain, rheumatism of the spine, chronic back-strain, etc.

It seems permissible, therefore, to make an attempt to present what facts are obtainable bearing on the etiology and pathology of the symptom-group, although the results of any classification not based on post-mortem findings must always be unsatisfactory.

In this consideration tuberculosis of the spine, organic nervous disease and the results of spinal fracture are omitted.

SYMPTOMS

The routine symptoms of the affection will best identify it, and may therefore be presented in outline at this point. The most important are an insistent or intermittent dragging, or more or less acute pain most often in the lower part of the spine, sometimes unilateral, sometimes bilateral, generally aggravated by standing or walking, and often shooting down into the buttocks and the backs of the thighs. Lameness in bending may be present. Tenderness is generally to be found over the lower lumbar region, and particularly over the region of the sacro-iliac joints. When the patient lies or sits she prefers to have the small of the back supported by a cushion. The affection may have begun slowly, or sharply with a catch in the back. Coccygodynia is not an unusual sympt[illegible]

It is more common in women than in men, anc [illegible] three types of figu[illegible]

nent buttocks and a sharp lumbosacral forward cur (the overfeminine type of Reynolds[2] and the kangar type of Dickinson and Truslow) and (3) cases slight lateral curvature. As a whole the resistance these patients is less than the average; many of th are neurasthenic, and the affection is notorio chronic. It may vary from a slight backache occur after exertion, to a degree which makes the pat an invalid.

FUNDAMENTAL CONSIDERATIONS

Certain fundamental facts lying at the root of problem under consideration are as follows:

1. We are studying the painful condition of upright, jointed, weight-bearing column, supported unstable equilibrium on the pelvis, to which it attached by the sacro-iliac joints. This column ben more easily to the front and back than to the sid and the upright position is maintained by muscul effort. Since the upright position of the body is mai tained in balance by muscular effort, and since general muscles in their size are proportionate to demand on them, one may obtain information as to balance of the body by comparing the size of th muscles at the front and back of the body. Th gastrocnemius is much larger than the anterior le muscles, whereas in the thigh the anterior muscles ar developed to hold the knees extended in standing, s that anterior and posterior muscles possess about th same diameter. At the level of the pelvis, however the great gluteal muscles have practically no anterior antagonists, and the erector spinae muscles are much heavier than the anterior abdominal muscles. The body, therefore, is to be regarded as balanced against an anterior load, as the posterior muscles are much heavier than are the anterior. That the body of the cadaver falls forward if placed erect with the knees prevented from flexing is well known.

2. The sacro-iliac joints transmit the weight of the spine to the pelvis and thence to the legs. They are ear-shaped articular surfaces of irregular contour, in general vertical in direction, containing some synovial membrane and heavy ligamentous bands. That they permit some motion is well established, but this amount of motion is small. Klein[3] found that 25 kg. of force applied to the symphysis [illegible] the sacrum fixed produced a rotation of th[illegible] the sacrum, which on the average, measur[illegible] excursion of the symphysi[illegible] 3.9 mm.

Horlick's will also serve Horlick's Malted Milk Ice Cream, which has made the "Horlick Booth" so popular at co ventions all over the country.
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nan. Measured at the sacro-iliac joint this excur- ı was about one-sixth of this amount; that is, in n the average amount of motion in the sacro-iliac ıt, measured at the posterior part of the joint, was ut 0.6 mm. These joints are protected against ch motion by intra- and extra-articular ligaments the heaviest variety. In front of them lie the nbosacral cord and sacral plexus.

3. The spinal column itself is an intricate structure vertebrae in contact with each other by two interrtebral articular surfaces and by four articular rfaces on the transverse processes, with of course 'o additional articulating surfaces for ribs in each rtebra in the dorsal region. The ligaments conecting the vertebrae are heavy and stronger on the terior than on the anterior aspect. Here then we 've a structure with about one hundred articulations d with intricate and firmly attached ligaments.

VARIETIES

Having investigated these fundamental considera-ıs, we come to the investigation of the causes of ronic backache. We can identify clinically three iologic classes about which there is no reasonable ubt.

1. Disease or displacement of the pelvic organs is iiversally recognized as one cause. Whether this is ue to a direct reflex influence, or because the patient inclined to assume a forward bent position to ease nder pelvic organs[2] and thus incur muscular backtrain, is not certain, although the clinical evidence 'ould seem to favor the latter. It is often the case hat in cases clearly of pelvic origin a successful peration fails to relieve the pain in the back until atment addressed to the static side of the case is bsequently added.

2. Traumatism to the back is frequently followed by chronic backache, and a traumatic class is generally accepted. The spine with its hundred joints and complex ligamentous support is as likely to be sprained as is any other joint, and from the difficulty of fixation of the spine such sprains are as a rule imperfectly treated, and a condition of chronic irritability is likely to arise similar to what we class as chronic sprain in the ankle and knee.

3. Finally, arthritis of the spine is a painful condition universally admitted. It may be the outcome of trauma or it may arise so far as we know spontaneously. It may exist in connection with arthritis elsewhere, or it may exist alone. It may be mild or severe and occurs most often at or after middle life.

But these classes, distinct as they may appear in a theoretical classification, are not always so clearly to be identified in practice, and many cases are seen which must be recognized as a mixture of these classes or as a mixture of one of these varieties with the group *next to be taken up.*

Having defined and set aside cases belonging to these three divisions we have still left unclassified what in p[illegible] practice in the United States constitutes a [illegible] ion of the cases (forty-one out [illegible] be pre-

relaxation of the sacro-iliac joint or joints. It is necessary therefore before proceeding further to examine the evidence for and against these theories, so far as may be done under the conditions.

THEORY OF STATIC ORIGIN

To consider first the theory of static origin: In a paper by Reynolds and Lovett[4] the conclusion was reached that backache of this character was caused by a forward displacement of the center of gravity of the body, causing undue strain of the posterior musculature of the body, and that this muscular strain was expressed as pain in the muscles and ligaments of the back, so that this type of backache was to be regarded as a symptom-complex due to abnormal attitude induced by peculiarities of the skeleton, lack of proper muscular balance or abnormal conditions in the abdomen.

The pain in the buttocks and back of the thighs is to be explained by the fact that the posterior musculature of the body is more or less continuous, and that the posterior irritation may be expressed as pain below as well as above the pelvis. This is, moreover, the reason that in such cases it is generally painful when lying on the back to have the leg flexed with the knee straight, which immediately pulls on irritable and overstrained posterior muscles.

Such a condition of pain and irritability would *a priori* be expected to occur in persons of diminished resistance or peculiar figures from continued strain of the posterior ligaments, fasciae and muscles of the back, and pain and tenderness in the neighborhood of the sacro-iliac joints occur, because here the erector spinae muscles have their origin, and pain at muscular origins and insertions is not unusual under conditions of prolonged muscular strain, as in flat-foot.

SACRO-ILIAC STRAIN

Given the conditions of such struggle against an anterior load, the result of attitudinal strain, it is not unlikely that in some cases the sacro-iliac joints may share in the process and become the seat of an irritation properly to be spoken of as a strain, and the same is very likely true of the integral joints of the spine. But to assume that there is a specific entity to be classed as sacro-iliac strain seems hardly warranted by the evidence, because all the symptoms attributed to it are more reasonably to be explained by a general attitudinal strain in which tenderness over the sacro-iliac joint or joints may be due just as well to muscular and ligamentous irritation as to joint-strain, and secondly, because the treatment to be described — a treatment generally successful — is addressed to the correction of attitudinal strain and not to the relief of a specific sacro-iliac strain.

SACRO-ILIAC RELAXATION

The assumption of a real sacro-iliac relaxation or subluxation lays itself open to a more definite line of proof or disproof, and that such an assumption is seriously made is shown, for example, in an article by Meisenbach[5] analyzing 84 cases of "sacro-iliac relaxation." A quotation from this article will repre-

Chas. Lentz & Sons, Philadelphia. Space 35. An extensive exhibit of many newly devised instruments will be completed for the occasion and the great diversity of apparatus shown will make this display of interest to all branches of the profession. A great many of the instruments to be shown have been perfected through the cooperation of a number of prominent surgeons of Philadelphia.

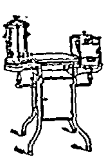
V. Mueller & Co., Chicago. Spaces 29-30. A complete line of surgical instruments, electrically lighted diagnostic instruments, and in fact all modern surgical appliances will be demonstrated. Among other bone-operating engines will be shown the Martel Automatic Engine for cranial operations or for general bone operations. A number of new x-ray accessories, such as screens, protecting devices, measuring instruments, etc., will also be shown.

George P. Pilling & Son Co., Philadelphia. Space 51. The Faught Blood-Pressure Apparatus will be demonstrated by an expert on blood-pressure. A Faught apparatus will be shown that during the past two or three years has been recording more than 1,500 times up to the 450 point. The apparatus is only intended to register to 300 point. This particular demonstrating instrument has been used not only up to 300 point, but again half way around, which is equivalent to 450 mm.

Precision Thermometer and Instrument Co., Philadelphia. Space 13. The many features which make for accuracy in diagnostic work as determined by the use of the new Nicholson Sphygmomanometer will be demonstrated. This mercurial apparatus is easy to read, simple to operate, records both systolic and diastolic blood-pressure, is not affected by climate or temperature and small in size so that it can be carried in the pocket.

Scholl Mfg. Co., Chicago. Space 58. Physicians who are interested in orthopedic work will be interested in the demonstrations to be given at this booth. The orthopedic appliances originated by this firm offer practical and unique methods of fitting corrective supports to the individual foot.

Taylor Instrument Companies. Spaces 24 and 25. At this exhibit a staff of trained medical men will demonstrate the use of the "Tycos" sphygmomanometer in general practice. The demonstrations will cover the taking of systolic, diastolic, and pulse-pressure. New booklets and other literature on the relation of blood-pressure in diagnosis of acute and chronic diseases will be distributed. Besides the "Tycos" sphygmomanometer, this exhibit will include a display of "Tycos" fever thermometers.

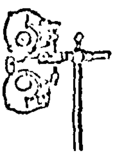


Wilmot Castle Company, Rochester, N. Y. Space 73. Those interested in sterilizing equipment for hospitals will find the Castle Pressure Dressing Sterilizer for bed pans of particular interest. This firm will also show the newest Castle-Rochester Outfits designed for offices and small hospitals; a Catheter Sterilizer; small Water Still; Milk Pasteurizer, etc. Information in regard to the design and construction of the complete line of Castle Hospital Sterilizers will be supplied.

ULTEX
ONEPIECE
LENS
THE PERFECT BIFOCAL

Wall & Ochs, Philadelphia. Space 27. The Ultex "one-piece" Bifocal Lens will be exhibited. This appliance is formed from a solid piece of crown glass and having two wholly distinct spherical curves upon one surface. In this lens there is no zone of cloudiness, no distortion of the object being viewed and no rainbow colors.

The Physicians Supply Co. of Philadelphia. Space 48. A full line of high grade surgical instruments, especially the latest in nose and throat specialties; also electrically lighted diagnostic instruments, sterilizers, bags and medicine cases will be displayed.

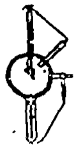


Michael Woolf, New York City. Space 15. This firm, known as "The ℞ House of New York," will exhibit many attractive ophthalmic specialties, including the new model of their Ski-optometer and combined muscle test. Their eye, ear, nose and throat adjustable electric bracket and lamp and other electric specialties have always made their exhibit a most interesting one.

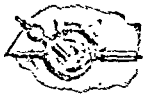
Apparatus—Electric

DeZeng-Standard Co., Camden, N. J. Space 78. Several new instruments will be exhibited. Among them a socket current controller embodying new and highly important features; an improved type of Electric Ophthalmoscope; a greatly improved model Naso-Pharyngoscope having external snap contact and upright image; a line of new instrument tables; a new electric near-point muscle test for use with the DeZeng Phoro-Optometer. Also a full line of electrically lighted diagnostic instruments for eye, ear, nose and throat work. Demonstration daily.

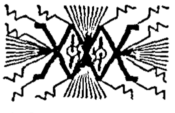
Electro Surgical Instrument Company, Rochester, N. Y. Space 38. Instruments made by this firm are constructed after the designs and suggestions of many physicians based on their practical experience. A line of electrically lighted diagnostic and operative instruments will be exhibited, such as urethroscopes, proctosigmoidoscopes, mastoid transilluminators, cystoscopes, nasopharyngoscopes, etc. Controllers and socket cautery transformers will also be shown.



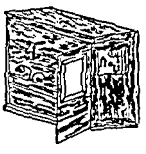
Green & Bauer, Inc., Hartford, Conn. Space 91. The well-known Clover Leaf X-Ray Tubes will comprise the main feature of this exhibit. It will be explained why the quality of these tubes is unsurpassed for all purposes and physicians will be enabled to observe the proper technic of manipulating them as demonstrated by experts in radiography and phototherapy.



Macalaster, Wiggin Co., Boston and Chicago. Space *57. A fine line* of x-ray tubes and accessories will be shown. They have developed a new water-cooled tube which *radiographers* state is doing *splendid* work. The target is of tungsten, and the water chamber is large, allowing long, continued runnings without over-heating. The regular line of tubes and accessories also will be shown.



The Wm. Meyer Co., Chicago. Space 47. A demonstration of their well-known line of interrupterless X-Ray equipments with the latest improvements in same, in the *way* of radiography and fluoroscopy without any guess work, also a moderate-priced klinoscope, which will do both vertical as well as horizontal fluoroscopic work. All the other various X-Ray appliances made by this company will be demonstrated.

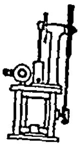


McIntosh Battery & Optical Co., Chicago. Space 81. There will be demonstrated a new X-Ray Transformer, *combining speed, efficiency* and protection. Visiting radiologists will be presented with a valuable x-ray appliance especially prepared for this meeting. The McIntosh Universalmode, Polysine Gen [illegible], Portable Coils and other specialties wi [illegible] own.

E. B. Meyrowitz, Inc., *New York*. Space 43. Will exhibit a full line of ophthalmological apparatus and special instruments. Among *these might be mentioned* the Marple Electric Ophthalmoscope, Klaar Headlight, Zeiss Magnifying Loupe, a most convenient form of Pocket Battery, a "Shockless" Rheostat, a new form of Mouth Gag, Nernst Operating Lamp and a full line of eye, ear, nose and throat instruments.

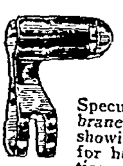
E. Machlett & Son, New York City. Space 103. X-Ray tubes for *deep therapeutic* and *radiographic work will* be demonstrated. Physicians will be given an opportunity to see the tube in operation and the technic of applying it therapeutically will be explained.

Scheidel-Western X-Ray Coil Company, Chicago. Spaces 107-108. Whether you are an x-ray operator *or not, this exhibit will* prove particularly interesting. Demonstrations will be given daily of the latest apparatus for roentgenoscopic examinations. There will also be shown a new *interrupterless* transformer which is said to be the first machine of this type where both the voltage and amperage will be under absolute control at all times.



***Victor* Electric Co.**, Chicago. Spaces 63 and 64. New apparatus and accessories brought out since the Minneapolis meeting will constitute the exhibit of this well-known concern, and there will be plenty to interest every physician or surgeon, regardless of his specialty, for this *firm reports* that it has broken more of its records for turning out new apparatus, during the past year, *than* during any similar period in its history.

Wappler Electric Manufacturing Co., Inc., New York City. Spaces 22 & 39. A large exhibit of electro-medical and therapeutic apparatus and electro-surgical and diagnostic *instruments*. There will be demonstrated the *interrupterless* King model X-Ray machines and interrupterless treatment type X-Ray machines which are fitted with their new single-impulse timer, and also fitted with a new serial timer. The exhibit will also include the Excell high frequency machine and a complete line of cystoscopes, urethroscopes, *headlights*, diagnostic instruments, controllers, pantostats, galvanic and faradic wall plates, etc.



Weder Manufacturing Co., Philadelphia. Space 59. A demonstration of the "De Lyte Surgeon," ever-ready case, consisting of electric light, directly transmitted, (1) through Ear Speculum, magnifying tympanic membrane, (2) through Nasal Speculum, showing turbinates, allowing packing for *hemorrhage under direct* illumination, (3) by using attachable Tongue Depressor, illuminating the throat, (4) for transillumination of sinuses, (5) with head-band attachment, for emergency operation.

Foods and Milk Preparations

Borden's Condensed Milk Co., New York City. Spaces 96-97. At these *booths* not alone will the firm exhibit their Malted Milk in powder form, but they will also serve Borden's Malted Milk Ice *Cream*. To those who have tasted this ice cream in the past, this will be a welcome *announcement*. *To* those who have not this is an urgent invitation to try it.

Horlick's Malted Milk Co., Racine, Wis. Space 5. As in past years this firm will display the Original-Genuine Malted Milk, together with Horlick's Food and Horlick's Diastoid. They will also serve the delicious Horlick's Malted Milk Ice Cream, which has made the "Horlick Booth" so popular at conventions all over the country.

HORLICK'S
TRADE
M.M.
MARK
MALTED MILK

The
Mellin's Food
Method of
Milk
Modification

Mellin's Food Company, Boston. Space 55. Physicians are cordially invited to make every inquiry regarding Mellin's Food and its use. Demonstrations will be made to show why there is a distinct advantage to the physician, to the mother and to the baby in the employment of the simple measures suggested in the plan upon which the Mellin's Food Method of Milk Modification is based.

Mead Johnson & Company, Jersey City, N. J. Space 49. An exhibit of their Dextri-Maltose (pure maltose and dextrin in about equal parts) will be made. It is a practical duplicate of the malt-sugar and dextrin preparations made in Germany, where they are largely used by pediatrists, especially those who employ the Finkelstein method of infant feeding.

ESKAYS
Albumenized
FOOD

Smith, Kline & French Co., Philadelphia. Space 9. Will show how Eskay's Food modifies cow's milk. The cereals preventing the formation of hard cheesy curds, while the other ingredients in its composition make up the deficiencies of cow's milk so that it will similate mother's milk.

Welch Grape Juice Company, Westfield, N. Y. Spaces 45 and 46. This firm will have a large and handsome booth in the form of a grape arbor, completely covered with artificial grapes and vines, from which will glow hundreds of tiny electric lights. Here Welch's The National Drink will be dispensed to the Delegates and their friends. In addition to its food value, Welch Grape Juice is being used by physicians as an excellent menstruum in which to administer oily and other disagreeable medicines.

Pharmaceuticals and Biologic Products

Antiseptic Supply Co., Inc., New York City. Space 85. An interesting exhibit of Causticks, Stypsticks, etc., the new form of applying silver nitrate, copper sulphate, alum, etc. Their use avoids the necessity of applying the same applicator in the consecutive treatment of different patients. Samples and descriptive literature will be distributed to all physicians who visit this booth.

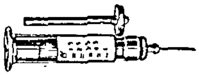
Arlington Chemical Co., Yonkers, N. Y. Space 54. Liquid Peptonoids and Dry Peptonoids Soluble will be exhibited together with Hemaboloids made by the associate of this firm, the Palisade Mfg. Co. A new reagent, Arlco-Urease (a urea- splitting ferment) will also be made a part of the exhibit of the former company. This firm will also conduct an accommodation bureau giving visiting physicians free service for writing letters. Competent stenographers will be in constant attendance.

Armour and Company, Chicago. Space 74. Therapeutic products made from glands and membranes supplied from the abattoirs, such as Corpus Luteum, Standardized Thyroids, Parathyroids, Suprarenals, Thymus, Spleen and Pituitary substances in powder and tablets. Also Pituitary Liquid, a solution of the active principle of the posterior lobe of the pituitary body; Red Bone Marrow, Lecithol, an emulsion of lecithin; Pepsin and Pancreatin in various forms for the profession.

Schering & Glatz, New York City. Space 105. An exhibit of the more recently introduced products of their extensive list of well-known synthetic chemical therapeutic agents. The firm will be glad to give information concerning all of these, as well as their organo-therapeutic and other preparations.

Reinschild Chemical Co., New York City. Space 79. The special ferruginous preparations —formulated by Dieterich—will be exhibited. Also agar-agar combinations prepared for administration according to the formulas of Dr. Max Einhorn.

Fairchild Bros. & Foster, New York City. Space 2. There will be exhibited Essence of Pepsin-Fairchild, the gastric gland extract; Holadin, the entire pancreas gland extract (powder) in enteric capsules; Holadin and Bile Salts; Panopepton, the food for the sick; Enemose, for colonic alimentation; the Fairchild Culture of the Bacillus Bulgaricus in sealed glass vials and in desiccated form in the Lactic Bacillary Tablets, and other Fairchild products.



H. K. Mulford Company, Philadelphia. Space 42. A scientific exhibit of bacterins, serums, sero-bacterins and vaccines. Showing methods of production with working bulletins compiled from the latest information on the special subjects treated. This is not only designed to be an interesting but an instructive scientific exhibit to aid every practitioner.

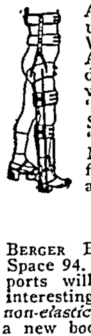
Schieffelin & Co., New York City. Space 6. An exhibit of the biologic products, including diphtheria antitoxin, tetanus antitoxin, antistreptococcic serum, vaccine virus and bacterial vaccines. The method employed in the production of these products will be shown in more or less detail, and will be explained by those in charge of the exhibit. The various containers of the products will also be exhibited.

E. R. Squibb & Sons, New York. Space 72. Will give demonstrations of the disintegrability of their tablets and also exhibit a representative collection of their high quality chemicals and pharmaceuticals, together with some of the impurities removed from the regular U. S. P. grade of products in the process of repurification necessary to bring the articles up to the Squibb standard.

Henry K. Wampole & Co., Inc., Philadelphia. Space 20. Pharmaceutical products will be displayed by this firm, including those prominently identified with U. S. P. and N. F. standards. Pulverous pills, fluidextracts, elixirs, syrups, solutions, tinctures, ointments, soft elastic and hard gelatin capsules, effervescent salts, lozenges, compressed and hypodermic tablets will be aptly displayed in illustration of the advanced achievements to-day of the manufacturing pharmaceutist.

The Zemmer Company, Pittsburgh. Space 23. An exhibit of their line of pharmaceutical products, comprising tablets, lozenges, dry-filled capsules, ointments, eye ointments and hypodermic tablets. This display will be of practical interest.

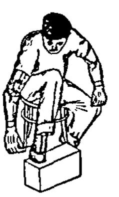
Artificial Limbs, Orthopedic and Supportive Appliances



Ambulatory Pneumatic Splint Manufacturing Co., Chicago. Space 10. Will demonstrate the advantages of Ambulatory Pneumatic Splint for reduction, bed and walking treatment of various fractures of lower limbs, also "Ambumatic" Washable Abdominal Supporters. Also a demonstration of 'Ambumatic" Flaxall Pure Linen Mesh Underwear, and of latest artificial limb, non-visible extension shoes and non-visible orthopedic appliances.

Berger Brothers Co., New Haven, Conn. Space 94. Spencer Abdominal and Spinal Supports will be exhibited. In addition to an interesting showing of supporting corsets and non-elastic belts, a limited number of copies of a new booklet on abdominal supports will be distributed gratis. The booklet analyzes, by means of pictures, the relative merits of various types of abdominal support.

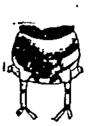
Van Orden Corset Co., Newark, N. J. Space 36. An interesting exhibit in which the La Grecque Surgical Corset will be demonstrated and [illegible] actual results on a specific case, under the [illegible] of a physician of standing, is to be sh[illegible] radiographs.



Carnes Artificial Limb Company, Kansas City, Mo. Space 76. Will exhibit an artificial arm and hand made of steel and fiber of such ingenious mechanical construction as to enable the wearer to automatically bend the elbow, bend and turn the wrist and open and close the fingers. The demonstration will be by men wearing the arm and will consist of such feats as writing, lighting a pipe or cigar, picking up suitcases, satchels, etc.

Spirella
PHYSICIANS APPLIANCES

Spirella Company, Inc., Meadville, Pa. Space 65. Will exhibit their line of physicians' appliances, asking particular attention to their binder over which *measurements are taken*; a new shoulder-brace and poise-correcting belt and corsets for the correction of splanchnoptosis and spinal curvature. The value of their exclusive stay in maintaining support without atrophy will be demonstrated.



Dr. Katherine L. Storm, Philadelphia. Space 66. It has been observed that many physicians use this belt for one or two conditions, as for operations or ptosis, and fail to realize its many-sided usefulness. Fitters employed by the firm will be at this exhibit to explain the efficiency of the appliance as a support in hernias, pregnancy, obesity, sacro-iliac relaxations and other unusual requirements.

Minerai Waters

Apollinaris Agency Company. Space 11. Apollinaris water, which is mildly alkaline and naturally effervescent, will be exhibited. It is bottled only at the Apollinaris spring, Neuenahr, Germany, and only with its own natural gas, as stated on the label. The same company will also exhibit "Apenta," the Hungarian natural aperient water, which is noted for its well proportioned content of magnesium sulphate and sodium sulphate.

Morris & Schrader, New York City. Space 61. An exhibit of Contrexéville water, which will be dispensed *ad libitum*. A full description of the various varieties will accompany the exhibit.

Miscellaneous

Deimel Linen-Mesh System Co., New York City. Space 34. This Underwear was invented by Dr. Henry L. Deimel, a California physician, some twenty years ago. The Seventeenth International Congress of Medicine held in London last August awarded this hygienic underwear a Gold Medal. There will be on exhibit different weights of cloth and the latest style garments.

Indiana Springs Co., Mudlavia, Kramer, Ind. Space 95. For the benefit of physicians who have not had an opportunity to visit Mudlavia, this company will maintain an exhibit showing in pictorial detail their special therapeutic agent, the Mudlavia Bath. Beginning with a view of the mud deposit in the natural state, the various steps in the process to completion of the bath will be shown; likewise the buildings and grounds with their special equipment.

The Pompeian Co., Washington, D. C. Space 88. Patients often refuse to take olive oil because the brand they purchase has a disagreeable taste. At this exhibit physicians will be given an opportunity to examine and taste Pompeian Olive Oil which is an absolutely pure product, pressed from the right kind of fruit, picked at the right time and clarified in the right manner—this care in preparation retains in the oil its agreeable fruity flavor, making Pompeian Olive Oil unsurpassed for medicinal uses.

Radium Chemical Company, Pittsburgh, Pa. Space 62. The exhibit will consist of a display of Radium salts of high purity. These Radium salts are prepared from carnotite ore mined in Colorado. The production of Radium in America in 1914 will amount to twice the old world's production. Demonstrations of the Radium rays will be given daily.

Weissfeld Bros., New York City. Space 85. Hospital wearing apparel, physicians' coats, surgeons' gowns, duck suits, smoking jackets, bath robes, dressing gowns, washable uniforms of every description, etc., will be displayed.

> joint. . . . The symptoms produced by any irregularity of the sacro-iliac joints depend on the pressure of the nerves involved and their distribution.

It is self-evident that a displacement of this joint severe enough to press on the nerve-trunks lying loosely in *front of* it must be evident to roentgenoscopy, yet — I quote again from Meisenbach — "Heretofore to my knowledge no x-ray has been published showing a dislocated or strained sacro-iliac synchrondrosis,"[6] and one has only to compare the roentgenogram of the "open" sacro-iliac (Fig. 4) of the article with the normal one shown on the opposite page (Fig. 3) to see that no evidence has in that instance been offered. In a case of Meisenbach's (Case 40) "movable sacrum" was diagnosticated by him, the symptoms being occipital headache and pain in the shoulder, the neck symptoms being attributed to "referred muscular spasms radiating from the sacrum."

In an examination of the roentgenograms taken of the eighty-three cases in my series (to be reported later) in no one was there the slightest evidence of any disturbance of relation in the joint. Post-mortem and dissecting-room evidence that this condition exists, except in connection with pregnancy and very severe or crushing trauma is so far as I know wanting.[7]

In Case 84 of Meisenbach's series a pathologic examination was made, as the patient died later of tuberculosis. The symptoms had been pain in the dorsal spine and legs following childbirth. At necropsy "some motion, but not marked, was noted." The joints were then sawed through, and by moving the ilia on each other the joints were observed to move "slightly." These findings are practically identical with those obtained in ordinary dissecting-room specimens.

The symptoms ordinarily described as characteristic of sacro-iliac relaxation are so far as I know identical with those detailed earlier in this paper, except that "slipping" of the joint is said to be felt when the patient stands, for example, on one leg and flexes the other and the surgeon holds one hand on the joint and the other over the pubis, or by manipulating the crests of the ilia with one hand on each, or by forced hyperextension of the thigh with the hand over the joint.

In my series of eighty-three cases, all examined carefully in this regard, I have failed to find any suggestion of such slipping or displacement or abnormal motion. It may be that my fingers are not sufficiently trained, but I have heard many of my colleagues confess to a similar disability. Again, in the one case seen by me in the last three years in which I believe that there did exist some slight degree of sacro-iliac displacement (Case 12), the symptoms were of a wholly different character from those described above, and were practically those of tuberculosis of the sacro-iliac joint, a peculiar sidling gait, great pain in walking and an inability to lift either leg properly in walking, with a feeling of instability.

The treatment afforded to cases of "sacro-iliac relaxation" not occurring in pregnancy, and the relief afforded by such treatment, as reported, is of itself the best evidence as to the incorrectness of the diagnosis. We have supposedly a relaxed or subluxated great joint, which bears at every step the whole weight of the body. The plane of this joint and the line of thrust on it are practically the same, that is, every step tends to thrust one joint surface along the face of the other. No joint in the body once relaxed could be so unfavorably situated for recovery while the patient is going about. Yet I quote from another author[8] to show the *treatment generally in vogue and the* mechanics on which it is based:

> A wide belt made of webbing 9 inches wide, extending from the trochanters up to the crests of the ilia, and encircling the pelvis and buckling in front, gives great relief by *immobilizing* the joint.

Again:

> *In mild cases with a movable sacrum, high-heeled shoes* may be all that is necessary (Meisenbach).
>
> In the acute cases an adhesive plaster strapping is applied to the back *to hold the joints together* until a properly fitting belt can be made.[9]
>
> Locally the entire principle of treatment concerns ways and means of *holding these joints together*. In the most severe it may be necessary to use a plaster spica or corset. Various other forms of *retention* apparatus are in use, and in some instances simply wearing a pair of closely fitting elastic silk trunks is sufficient. If it is desired simply to provide *immobilization* for a few days . . . one may strap the pelvic girdle firmly with adhesive plaster.[10]

Plaster jackets and braces of one kind and another to secure lumbar lordosis or pressure on the sacrum are also advocated.

The upshot of all this is that we are asked to believe that a pair of elastic silk trunks, strips of adhesive plaster on the skin, a webbing belt or even a plaster-of-Paris jacket will jam together sufficiently firmly to prevent their slipping by each other, these "relaxed" sacro-iliac joints. These joints, which must bear at each step a downward sliding thrust of from 75 to 125 pounds, are deeply embedded, so far as lateral pressure goes, in great masses of fat and muscle, and we are asked to believe that straps of adhesive plaster on the movable skin will "immobilize" them, that is, prevent them from slipping on each other. Here one must apply the simplest rudiments of physics and an elementary knowledge of anatomy and decide according to his individual habit of mind whether or not "slipping" of the sacro-iliac joint is likely to be prevented by these measures.

Contrasting the two theories then, we must recognize that the static cannot be proved or disproved by the Roentgen-ray or pathologic evidence; that sacro-iliac relaxation can be proved in this way, but that such proof is as yet lacking; that the symptoms described fit the static theory, and that the treatment advocated could easily afford relief in certain static cases by affording an annular ligament to the glutei muscles which hold the trunk erect on the legs, for the blacksmith straps up the muscles of his forearm before starting on heavy work; but it is not possible that the apparatus advocated can have the slightest effect in immobilizing a "slipping" sacro-iliac joint. That sacro-iliac strain may exist in connection with general attitudinal strain seems probable, but that sacro-iliac relaxation is a common cause of chronic backache is apparently still to be demonstrated.

The diagnosis of sacro-iliac "trouble" or "dislocation," "relaxation" or "displacement" is at present a very popular one, and eminently satisfactory to the patient, because it seems serious and unusual, and equally satisfactory to many general practitioners because it seems explanatory. Its adoption demands no etiologic study and only a routine treatment. The diagnosis of "static backache," on the other hand, means that the careful surgeon must look into the cause of it and try to remove this before proceeding to treatment. It is significant that the sacro-iliac diagnosis is but little heard of or discussed in Europe, and that foreign literature on the subject is practically lacking.

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[6] Meisenbach: Monatschr. f. Unfallheilk., 1909, No. 3 (giving an account of eight cases of traumatic luxations).

[7] Grimbach: Deutsch. Ztschr. f. Chir., October, 1908.

[8] Pitfield: Am. Jour. Med. Sc., June, 1911.

[9] Morrill: Cleveland Med. Jour., October, 1910.

[10] Swett: Yale Med. Jour., October, 1908.

The etiology and classification of cases having thus been defined, it becomes important to consider how these theoretical considerations work out in practice, and especially in the treatment of the different groups.

I. BACKACHE OF PELVIC ORIGIN

Pelvic backache, so far as the back itself is concerned, possesses no definite characteristics to distinguish it from backache of static origin, and mixed forms are frequent. In general, pelvic backache is sacral, but may be dorsal, and is generally associated with a history of symptoms pointing to pelvic disturbance. This similarity of back symptoms in static and pelvic cases tends to support the theory that pelvic backaches are most often caused by the forward bent position mentioned above.[11]

II. BACKACHE FOLLOWING TRAUMATISM

In the history of many cases of chronic backache a traumatism in former years of mild or severe nature is to be found. Many of these cases without this history would have to be classed as probably due to defective balance, but the history of a trauma or overstrain in the past makes it doubtful if they belong to that class. Cases of postoperative backache apparently belong in this class.

A very puzzling class of cases lies between the divisions of those associated with trauma and those clearly arthritic. In the acute stage even if they have a traumatic history they are not always to be distinguished from each other, but the recovery of motion under treatment in a few months, of cases apparently arthritic, leads to the belief that they could not have been due to arthritis of any degree, and it seems better to regard them as analogous to the stiff and painful feet resulting from trauma which are spoken of as "chronic sprains," and which also in their acute stage cannot be clearly differentiated from arthritis at the outset.

III. FORMS DUE TO ARTHRITIS

The recognized symptoms of arthritis of the spine are stiffness and lateral deviation of the spine, pain in the back and legs often classed as "sciatica," a loss of the lumbar curve, and in the severer cases localized disturbances of sensation in definite areas in the legs, and sometimes even some loss of motion in some muscles. The leg pains are to be attributed to nerve-root pressure, and the anatomic distribution of the pain and sensitiveness often shows nerve-root pressure rather than an involvement of the whole sciatic nerve. Pain is noticeable on movement, and a "catch" in making some slight movement frequently occurs at the onset, and often in the course of the affection. A history of recurrent "lumbago" is frequent.

Roentgenoscopy reveals in some cases the presence of osteophytes in the vertebrae, and "lipping" or overgrowth of the vertebral edges; but in other cases presenting exactly the same symptoms no such changes are to be found, yet their long-continued course and recovery with stiffness of part of the spine suggests that the latter are also arthritic.

IV. CASES DUE TO DEFECTIVE BALANCE

These may be classed as (1) those due to defective lateral balance, and as (2) those due to defective anteroposterior balance.

Lateral Defects in Balance.—If one leg is longer than the other, the pelvis must become oblique and the spine curved to one side in standing, and the muscles of one side (generally on the convex side of the curve) are under more strain than those of the other side. This is the simplest form of backache due to defective balance. The pain and discomfort will be most noticeable in standing and walking, and will in many cases be marked over the sacro-iliac region, oftenest on one side. In susceptible persons only a slight degree of lateral curve may be required to produce such backache.

Case 7.—A clergyman, aged 40, consulted me in 1910. He had always been conscious of his back, even as a boy, having had pain in the lower part of the back and at the end of the spine. For the last two or three years the backache has been decidedly worse, and he now has great discomfort in the lumbar spine in standing and walking; there is no pain in the feet, legs or thighs. After preaching he becomes exhausted, and his nervous endurance is poor. Examination shows a marked lateral curve of the spine to the left, due to 1 inch shortening of the left leg from an unknown cause. This was corrected by a high sole on the left boot, and relief from the backache came in about three weeks, accompanied by very marked improvement in general health and endurance. Two months later he was practically well, and has remained so.

Defective Anteroposterior Balance.—The simplest type of this variety of backache is shown when the abdomen is so large as to cause a serious anterior load.

Case 8.—A man of 55, in active business, vigorous and athletic, was referred to me in July, 1912, by Dr. S. J. Mixter of Boston, for a persistent lumbar backache of many years' duration, which came on in standing and walking but not in horseback riding. It was so severe that the patient had recently avoided all possible standing and walking. The back was flexible, but the back muscles were spasmodic and hard to the touch. The abdomen was very large and lax. A close-fitting corset was applied to support the lower abdomen, and immediately partial relief was felt. In two weeks the pain had disappeared, and a year later the abdomen was smaller and much less lax, and there was no pain whatever unless the corset became loose. At this time the patient was given exercises for the abdominal muscles.

That defective anteroposterior balance may be manifested by pain in other posterior muscles than those of the back is shown in the following case:

Case 9.—Woman, aged 25, single, referred in June, 1909, by Dr. Ansel G. Cook of Hartford, who had at one time treated her, complained of great discomfort, especially at the back of the knees, aggravated by standing and somewhat by walking. The pain was attributed by the patient to varicose veins, and she had many cramps, especially in the right leg. The patient stood with an increased curve in the lumbar region, and there was a loss of dorsal flexion in both feet. The gastrocnemii were stretched, higher heels were put on the shoes, and a therapeutic corset was applied.

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[11] Cases illustrating backache of pelvic, traumatic and arthritic origin are omitted in this place for the sake of brevity. Complete reports of these cases will be given in the author's reprints.

The patient was dissatisfied with the opinion that varicose veins were not the cause of her trouble, and disappeared. In December, 1910, she returned to report that she had had complete relief of all her symptoms shortly after her first visits. When the therapeutic corset wore out and failed to give her support she had much trouble again in the legs, but on getting a satisfactory corset again the pains in the back of the legs disappeared.

In other instances, anteroposterior balance is disturbed by flat-foot and similar conditions, which, by affording an abnormal base of support, induce back-strain.

Case 10.—A healthy and vigorous domestic servant, aged 30, consulted me in 1907 for a flexible flat-foot, which gave more trouble in the hips and back than in the feet. Flat-foot plates relieved the pain in the hips and legs, but the backache was so severe that a corset and shoulder-straps were applied, which finally relieved the pain in the back. The patient remained comfortable till 1912, when some friends induced her to discard the plates and wear a boot with a low heel and flexible shank. In two weeks the backache became intolerable, and she was unable to work for a day or two. She reapplied the plates, and her symptoms disappeared.

Backache due to relaxed and slumped attitude is perhaps the commonest type of static backache.

Case 11.—July, 1908, a girl, aged 15, reported that for some years she had had pain in the hip and sacral backache, diagnosticated as sacro-iliac joint affection. The general attitude was bad, the spine being decidedly rounded in the dorsal region. The spine was tender to the touch, and the girl's endurance was poor, the patient having been out of school for a year and a half. She returned for treatment in September, 1908. She was given a therapeutic corset and started on exercises, which she did daily. Setting-up exercises of a very gentle character were at first given in the recumbent position, and were made more forcible and given in the erect position. After two weeks' treatment the patient was allowed to go home, with directions to lie down half an hour in the afternoon, to take half an hour of active exercise outdoors three times a week, to pursue the exercises, and to go to bed at 8 o'clock each night. The pain in the back gradually disappeared, and after a few months there was no further trace of it.

Finally, there are cases apparently due to defective balance in which the pelvic organs are normal, there is no history of trauma and no reason to suspect arthritis, and yet no gross malposition in the standing position is to be detected. It must be remembered with regard to these cases that we have as yet no reliable normal for the upright position to guide us, that individual variations are many, and that in a given person it cannot be said that he or she stands in such a way that back-strain is not to be considered.

FREQUENCY OF DIFFERENT FORMS

Having thus presented the types of backache with which I am familiar, I proceed to the analysis of 83 cases seen by me in 1912 in private practice either at my office or in consultation, in order to see what they show as to the relative frequency of the different forms. Of these cases 29 were males, and 54 females. In age, the patients ranged from 10 years to over 70, with a fairly even distribution by age periods, but rather more frequent between 15 and 20 and between 35 and 50 than at other ages. As to duration, only 6 were of less than six months, 14 were from six months to a year, four were from ten to fifteen years, and 9 were said to have lasted "many years."

As to the classification into the groups described I found as follows:

Lateral defect in balance, 10, (three of these occurring in bony lateral curvature).

Anteroposterior balance, 31. (Five were due to large abdomens, and in fifteen cases there was some static error in the feet which seemed to have an influence on the defective balance.)

Pelvic, 6.

Traumatic, 20. (Five of these were associated with obviously bad standing positions, but in the others the trauma seemed the only cause.)

Arthritis, 15, (in which must be included two cases of "recurrent lumbago" probably arthritic).

Acute lumbago, 1. (This case was too acute to determine the division to which it belonged.)

The case which was spoken of early in the paper, in which I believe that a lesion of the sacro-iliac joint occurred, was the following:

Case 12.—A healthy woman of 40, of athletic habit, in the fall of 1911 was standing bent over her dog, which she was washing. Her trunk was horizontal, and with one hand she was holding the dog, when with the other arm she reached up and to the right to get a piece of soap. Something snapped in the right side of the back low down, and when she tried to stand erect it was done with difficulty and with much pain in the right sacro-iliac region. Walking was accomplished with much pain. She had to keep rather quiet, and was treated by an osteopath for a week without relief. When she sent for me I found marked tenderness over the joint, pain in movements of the right leg, especially in walking, and a sidling gait much like that seen in tuberculous disease of the sacro-iliac joint. The back was strapped with adhesive plaster, not with any idea of fixing the sacro-iliac joint, but for the same kind of support that one would give a sprained ankle by a sticking plaster or cloth bandage. Walking was forbidden, and a tight-fitting corset made and worn day and night. More exercise was gradually allowed, followed by massage and exercises for the back muscles, and in six weeks the patient was sufficiently well to resume fancy dancing, which was her means of exercise. There has been no return of the trouble.

DIFFERENTIATION

If a case is traumatic in origin and if the sacro-iliac joints are normal in the roentgenogram and to the touch, it is to be assumed that the muscles, ligaments or joints of the spine or of the spine and pelvis have been sprained, and that the condition is similar to that of the sprain of any other joint. If the case is not traumatic in origin, lateral and anteroposterior balance are to be investigated, and static errors in the feet must be remembered as one cause of defective balance. The round back and the overfeminine figure seem especially prone to static backache, but the diagnosis of this type must sometimes be made in the absence of gross malposition.

In all cases in women the possibility of a pelvic cause must be borne in mind, and an inquiry into symptoms indicating pelvic disorder may lead to a conclusion that a competent cause for the backache exists there. The case must be classed as probably arthritic when it is chronic and there are marked stiffness and pain in motion, with muscular spasm and secondary lateral curvature. Referred pains in the legs and disturbances of sensation are suggestive. A fair-minded surgeon, however, must sometimes confess that he cannot classify the case with certainty.

The coexistence of neurasthenia or psychasthenia does not invalidate the diagnosis, and the diagnosis of hysteric or neurasthenic spine is no diagnosis at all.

PROGNOSIS

Since I have investigated and attempted to classify my cases more closely, my results and prognosis have been much more satisfactory. In balance cases I give a favorable prognosis under proper treatment unless the patient is neurasthenic, in which case I am extremely guarded and doubtful in my own mind as to the outcome. Cases clearly pelvic in origin should not be treated by the orthopedic surgeon of course; cases clearly traumatic are favorable as to prognosis except in elderly persons and in those undertaking litigation. In arthritic cases seen fairly early I look for recovery from pain with a spine more or less stiff, and I expect them ultimately to give up support.

The results in the eighty-three cases seen by me in 1912 are tabulated from my records as follows: cured, 33; improved, 10; relieved, 24; failure to relieve, 4, and no final note, 12.

TREATMENT

The treatment of the pelvic variety belongs to the gynecologist, but it must be remembered that there are often border-land or mixed cases, and that treatment of the static element may be subsequently required, and in certain mixed cases in which either the static or pelvic element may be considered a competent cause, it may be desirable to try the mechanical treatment before proceeding to operation, provided the patient is aware of the situation.

The treatment of arthritis of the spine consists in fixation of the spine, and my personal experience has led me to regard the plaster-of-Paris jacket for this purpose as uncomfortable and on the whole unsatisfactory. A canvas corset, lacing in the back, reinforced by light steel straps, has proved much more efficient and adaptable. In the severest cases a leather corset or steel back-brace may be required.

The treatment of traumatic cases does not differ essentially from that of the arthritic cases just described in the severer cases, or in the lighter cases from that of the static cases to be discussed next.

In the treatment of static cases unilateral defects in balance should be carefully studied, and if present, as shown by a lateral curve of the spine (generally slight), should be corrected by elevating one heel. Static disturbances of the feet, as shown by pronated feet or by feet with short gastrocnemius muscles, should be corrected. The general condition must be inquired into, and so far as practicable, overstrain and faulty habits of life remedied. Recumbency for part of the day is desirable in most cases, and severe cases at first should be recumbent for most of the time.

The mechanical treatment of static cases here advocated is based on the experimental work of Reynolds and Lovett, and on clinical experience. This work showed that a properly fitted corset threw the center of gravity of the body back, and that this effect was reinforced by high-heeled shoes; consequently, in cases presumed to be due to a forward displacement of the center of gravity of the body, and to resulting posterior muscle-strain, the application of a properly fitted corset is the most important part of the treatment. Muscular training might be supposed to be the first requisite, but we are dealing with overused and irritable muscles which first demand rest and support, and as a rule the immediate use of gymnastics and back-massage is unsuccessful and irritating.

The requirements of a therapeutic corset are as follows: 1. It should be tightest around the bottom, and the circular pressure should diminish from the bottom to the top, where it should be loose. In this way abdominal support is afforded and the circular constriction around the glutei, already spoken of, is furnished. 2. It should be straight in front. 3. It should support the hollow of the back. 4. It should not press forward against the back at the top. A therapeutic corset does not require heavy steels to make it efficient, but its proper effect depends on the cut of the cloth and the lines of strain, and the manufacture of such a corset lies within the capacity of any good corset-maker. Ready-made corsets may in many instances be adapted to the proper requirements. For men, a heavier canvas corset, reinforced as may be needed by light steels, is preferable to the lighter woman's corset. The heels of the shoes should in most instances be raised an eighth or a quarter of an inch. As the back quiets down, gymnastic exercises and massage of the back are desirable, and such exercises should be aimed at teaching the patient to learn to assume and to hold a more normal standing position. The electric light is often of value.

CONCLUSIONS

This paper is a plea for a careful etiologic study of each case of chronic backache or lameness of the back, and an attempt to present a classification which is very crude, but which has worked out satisfactorily in practice. Cases have been cited to show the variety of symptoms and the way in which treatment has or has not been successful. The popular diagnosis of "sacro-iliac relaxation" has been commented on, and attention has been called to the fact that adhesive-plaster straps on the skin cannot possibly "immobilize" relaxed sacro-iliac joints which at every step must bear the weight of the trunk as a downward thrust, and that the fact that treatment of this sort often relieves symptoms is fair evidence that the diagnosis in such cases in incorrect.

234 Marlborough Street.

THE USE OF CHOLESTERIN ANTIGEN IN THE WASSERMANN REACTION

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A method of preparing a standard antigen for the Wassermann reaction is given in the Yale number of the *Archives of Internal Medicine*.[1] The advantage of the method is that at any time an antigen may be prepared that gives constant results in the reading of the reaction. This antigen is an alcoholic extract of guinea-pig heart half saturated with cholesterin; the reason for the addition of this substance is at present unknown, but it seems to stabilize the reaction.

Of late there have been a number of articles criticizing the addition of cholesterin to the syphilitic antigens, most of the authors asserting that it renders the antigen too sensitive. As a result of something more than five thousand routine tests[2] comparing the acetone insoluble antigen with this cholesterin antigen, it was found more constant and more reliable if certain fundamental conditions were observed in using it. Some workers recently have recommended the use of 1 or 1½ units of complement instead of the 2 units as used in the original Wassermann method, in order to render the test more delicate. The persons recommending this modification can have but slight knowledge of serum work, for they seem not to realize that Wassermann adopted the 2 units of complement for a very definite and, to all serologic workers, a well-known reason. The complement is thermolabile, and its exposure to a temperature of 37.5 C. (99.5 F.) for one hour decreases its activity. Therefore, if but 1 unit of complement is used, some is destroyed during the binding period and so a partial inhibition will occur without any reaction between antibody and antigen.

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[1] Field, Cyrus W.: I ethod Developed for Obtaining a Standard Wassermann Reaction, Arch. Int. Med., May, 1914, p. 790.

[2] All patients over three days in the hospital are supposed to have a Wassermann test. From fifty to one hundred tests are performed each day, five days of the week.

The cholesterin antigen must be used with between 2 and 3 units of complement; even 4 units will reduce the reading only slightly. The presence of a native hemolysin may be ignored entirely, as it makes no difference if there be 2 or 10 units of amboceptor present, if the sheep-cells have been sensitized with hemolysin before they are added to the serum-complement-antigen mixture. These facts may be seen in Table 1. Again, with cholesterin antigen it is unnecessary to make use of the ice-box incubation of the serum-complement-antigen system as the cholesterin seems to increase the velocity of the reaction. The rule in this laboratory is to incubate the complement-serum-antigen mixture in a water-bath for not more than fifty minutes at from 35 to 36 C. (from 95 to 96.8 F.). As has been pointed out,[1] six different dilutions of the antigen are used for testing each serum. The greatest amount of antigen used is 0.1 mg., with 0.1 c.c. of the serum, plus from 2 to 3 units of complement. The second antigen tube contains 0.08 mg., the third 0.06, the fourth 0.04, the fifth 0.02 and the sixth 0.009 mg. In this way we have a series of tubes with a constant amount of serum and a decreasing amount of antigen, and if we let 0 represent complete hemolysis, 1 marked hemolysis, 2 slight hemolysis and 3 no hemolysis, we have a possible numerical series of from 0 to 18, depending on the amount of inhibition of hemolysis in this series of tubes; for complete inhibition in all six tubes would give 3 × 6 = 18.

TABLE 1—COMPARISON OF VARYING AMOUNTS OF COMPLEMENT AND AMBOCEPTOR ON A POSITIVE WASSERMANN

						Antigen Tubes					
A	B	C	D	E	O	0.10	0.08	0.06	0.04	0.02	0.009
0.1	2	2	1	16	0	3	3	3	3	3	1
0.1	4	2	1	14	0	3	3	3	3	2	0
0.1	6	2	1	8	0	3	3	2	0	0	0
0.1	2	4	1	16	0	3	3	3	3	3	1
0 1	4	4	1	13	0	3	3	3	3	1	0
0.1	6	4	1	7	0	3	3	1	0	0	0
0.1	2	6	1	16	0	3	3	3	3	3	1
0.1	4	6	1	13	0	3	3	3	3	1	0
0.1	6	6	1	10	0	3	3	3	1	0	0
	2	2	1	0	0	0	0	0	0	0	0

A = Amount of patient's serum in 1 c.c.
B = Units of complement.
C = Units of amboceptor.
D = Units of sheep red blood-cells.
E = Total number of units.
O = Control tube; no antigen.

In the series of over five thousand cases, only 0.5 per cent. have given complete inhibition in the 0.009-mg. tube. If too little serum is obtained to use in the six antigen tubes and one or two controls, we can reverse the procedure and vary the amount of serum, keeping the antigen constant at 0.1 mg. in each tube. The results of such a procedure may be seen in Table 2, and it shows well the close agreement in the final readings of the two variations. The amount of antigen 0.1 mg. is one-fifth the anticomplementary dose with the complement diluted 1:8 and using 0.5 c.c. This may be seen in Table 3. We do not find anticomplementary substances in the serum if it be poured off the clot within twelve hours after collection and centrifuged free of red cells.

TABLE 2.—COMPARISON OF POSITIVE SERUMS WITH SERUM CONSTANT, ANTIGEN VARIABLE, AND ANTIGEN CONSTANT, SERUM VARIABLE

		0	1	2	3	4	5	6	T
58	A	0	3	3	3	3	3	0	15
	B	0	3	3	3	3	3	0	15
62	A	0	3	3	3	2	0	0	11
	B	0	3	3	3	1	0	0	10
66	A	0	3	3	3	3	3	0	15
	B	0	3	3	3	3	3	1	16
67	A	0	3	3	3	3	3	0	15
	B	0	3	3	3	3	3	1	16
70	A	0	3	3	3	3	3	0	15
	B	0	3	3	3	3	3	0	15
72	A	0	3	3	3	2	1	0	12
	B	0	3	3	3	3	2	0	14
73	A	0	3	3	3	2	0	0	11
	B	0	3	3	3	3	1	0	13
75	A	0	3	3	3	3	1	0	13
	B	0	3	3	3	3	3	0	15

A = Serum constant, 0.1 c.c. antigen variable; 1 = 0.1 mg.; 2 = 0.08 mg.; 3 = 0.06 mg.; 4 = 0.04 mg.; 5 = 0.02 mg.; 6 = 0.009 mg.
B = Antigen constant, 0.1 mg. serum variable; 1 = 0.1 c.c.; 2 = 0.08 c.c.; 3 = 0.06 c.c.; 4 = 0.04 c.c.; 5 = 0.02 c.c.; 6 = 0.009 c.c.
O = Control tube, 1 c.c. serum, no antigen.

TABLE 3.—ANTICOMPLEMENTARY TITRATION

	Amounts of Antigen in Milligrams									
A	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.
0.4 c.c.	0	0	0	0	1	1	2	2	3	3
0.5 c.c	0	0	0	0	0	1	1	2	2	3
0.6 c.c.	0	0	0	0	0	0	1	1	1	2

After 1 hour at 37 C., 1 unit of sheep red cells sensitized with 2 units of amboceptor were added. Column A = amounts of 1:8 complement solution.

Complement titer with 2 units of amboceptor + 1 unit of non-sensitized sheep red cells. Amounts in cubic centimeters of 1:8 complement.

0.5 c.c.	0.4 c.c.	0.3 c.c.	0.2 c.c.	0.1 c.c.
0	0	0	0	1

With this cholesterin antigen the serum must be inactivated. The constancy of the unit readings was demonstrated in the previous paper,[1] and in Table 4 there are shown various readings on the same patient obtained at different times. A child was admitted to the hospital with amaurotic family idiocy. This child gave negative Wassermann reactions, but in its appearance suggested congenital lues. The blood from the father (B. S., a Hebrew, aged 28) was found to have 15 units. He did not accept this report and had his serum taken by a private physician, who sent it to the Board of Health; it was reported a very strong positive. Not satisfied with this, and unknown to ourselves, he came to our dispensary and his blood was again sent in to this laboratory, where it was reported again 15 units. He then went to a large private hospital in this city where he had his Wassermann taken again, and this time it was reported negative. For some unknown reason he was dissatisfied with this report and returned to our dispensary, where the blood was once more taken and sent to the laboratory and reported back 15 units. At the time these readings were made the previous reactions were unknown to us. He came to the laboratory a week after the last report, thinking that it was another institution, to have another test made. He maintained that he had never been sick and had never had a chance to contract the disease. On questioning him closely it was found that he had not been in robust health for some years, that his wife had not been well since she had married him, and that the child with amaurotic family idiocy was the youngest, the elder one (aged 6) having always been a sickly and poorly nourished infant. He was requested to bring his wife and eldest child to the laboratory, which he did. Blood was obtained from all three and the result of the tests is shown in Table 4. The child presented the appearance of a case of mild congenital lues with slightly pegged teeth. The mother stated that she had had one miscarriage at six months and one birth of a dead child at full term; that she suffers continually from headaches and is ill nourished. The husband complained for the first time of his mouth being sore; his tongue showed several typical mucous patches. With the acetone-insoluble antigen the child showed a weak positive, and the mother was negative. In Table 4 the reactions are with the cholesterin antigen.

TABLE 4.—WASSERMANN REACTIONS WITH CHOLESTERIN ANTIGEN

Patient	Date	Units
B. S.	1/28/13	15
B. S.	2/18/13	15
B. S.	3/11/13	15
B. S.	3/3 /13	15
Wife	3/ 3/13	2
Child	3/ 3/13	11

The clinical diagnosis of syphilis may be extremely difficult and we now know that there are many cases of latent or mild lues in which the disease is not suspected, and in many cases no so-called primary or secondary lesions are observed, and these patients may give negative Wassermanns and show no symptoms leading one to suspect a diseased condition clinically. The court of last resort as to the value of the Wassermann reaction must be the post-mortem examination. In this hospital the positive Wassermanns, even when only 1 or 2 units during life, have been constantly associated at post mortem with pathologic lesions which have been recognized for years as being syphilitic. On the other hand, there have been a certain number of cases showing syphilitic lesions which have given during life a negative Wassermann. Until there is obtained a series of one thousand or more necropsies with Wassermann reactions taken during life and correlated with the necropsy findings, it is merely guesswork to state the absolute value of this reaction. We must, it seems, revise a great many of our conceptions in regard to lues. The more we study it in the light of the Wassermann reaction, the more closely does it resemble tuberculosis in its protean manifestations. Also, we must bear in mind that there are, without doubt, variations in the virulence of different strains of spirochetes and that there are variations in the resistance of individuals to the spirochete. Not until a very large series of cases has been studied in the routine manner described shall we be able to follow this disease in all its manifestations.

In conclusion, we must remain in a neutral position in the face of weak positive reactions, and in justice to the patient we should give a provocative dose of salvarsan or neosalvarsan and see whether or not the reaction is increased. In this hospital we have in several cases found it necessary to give two or even three and four full doses before being able to obtain a positive reaction in known syphilitics. In view of the possibility of these cases developing syphilitic lesions of the parenchymatous type, we must be on our guard and watch such patients very closely, since after the development of paresis there is little hope in specific therapy.

Under specific treatment the reaction slowly disappears and the serum from week to week shows a gradual drop in the number of reacting units. The reaction disappears with this cholesterin antigen much more slowly than with any of the other antigens. The statement made recently in the *British Medical Journal* that a positive reaction with this antigen means only that the patient has had syphilis and does not indicate a still active process is, in our opinion, unjustified by the facts and our observations.

First Avenue and Twenty-Ninth Street.

FATAL ATTACK OF FILARIAL LYMPHANGITIS SIMULATING BUBONIC PLAGUE

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Patient, R. P., aged 10, reported as a suspected case of bubonic plague, entered the Quarantine Hospital at noon, January 28. Two hours and a half later an examination was made by the director of sanitation and myself. From a careful observation of the symptoms, and exploration of the painful zones in the groins we concluded that the diagnosis of plague was probably incorrect; but we were convinced that the suspicions of Dr. Dobal, the attending physician, were justified; because painful glandular infarcts, suddenly appearing in the groin of persons living in tropical regions in which previous epidemics of bubonic plague have been registered, may and should be considered as suspicious, especially when accompanied by serious general symptoms, such as fever, delirium and stupor, provided that, as in this case, the patients are not affected with venereal diseases or ulcerative or inflammatory processes of the inferior extremities.

General Examination.—The child was seriously ill. He was lying in a dorsal decubitus with the right thigh flexed on the abdomen, unconscious and stuporous; the expression in the eyes was vague and irresolute, and in answer to questions only whispered incoherent phrases were elicited. The pulse was uncountable, the temperature exceeded 39.5 C. (103.1 F.), subsultus tendinum almost continuous and a quiet delirium gave evidence of the exhaustion of cerebral centers now thoroughly intoxicated. There was involuntary emission of much dark and fetid liquid fecal material. Locally we observed only two small glandular infarcts in the region of the right groin, which were excessively painful on palpation, and pressure no matter how light, awakened the patient from his stupor, and caused him to complain and sometimes to cry out. The patient was in fact overwhelmed by the fierce onset of some virulent toxin, and was quietly succumbing to the inevitable narcosis of death.

The manner of onset of the attack, with strong chill, hyperpyrexia, thirst, and later vomiting, all rapidly followed by delirium, stupor, and profuse diarrhea, clinically excluded the diagnosis of any ordinary form of bubonic plague in spite of the intense pain localized in the region of the right groin and the hardly perceptible infarct of the inguinal glands. To those accustomed to follow the course of plague, there was no possible confusion except with septicemic forms with poor reaction. But in such case, the experimental inoculations, etc., would openly resolve all doubts. On the contrary, the sudden attack, the suggestive history of its progress during the preceding twenty-four hours and the suspicious syndrome presented, impressed on our minds the belief that we were facing a case of pernicious filarial lymphangitis. I was informed afterward that the same suspicion had passed through the minds of Drs. Gutierrez Igaravidez and Zavala, who independently and on different occasions examined the case.

We felt obliged therefore to conduct our investigations with both possibilities in view, because the etiology and pathogenic problems had exceptional importance from the sanitary point of view as well as for that affecting the nosography of the country.

Urinary Examination.—A specimen of the patient's urine (100 c.c. obtained by catheter) was examined at the biological laboratory, Mr. J. Loubriel performing the chemical analysis, and I the microscopic examination of the sediment. In the dense and reddish urine, specific gravity 1.024, Loubriel discovered only traces of sero-albumin, but in the sediment I verified the presence of the following histologic elements: fairly numerous erythrocytes, a number of leukocytes in proportion to the frequency of red corpuscles, fairly numerous epithelial cell of the tubuli contorti, some of the renal pelvis, a moderate number of hyaline casts, a few finely granular casts, fairly numerous irregular crystals of uric acid, and a most unique and interesting find: lying near one of the edges of the preparation there appeared a beautiful specimen of Lewis and Manson *Microfiliaria nocturna*, embryo of *Filaria bancrofti*, confirming the tentative clinical diagnosis which we had made. All the operations were accomplished with exquisite cleanliness from the moment of the catheterization up to and including the microscopic examination of the sediment.

Blood Examination.—The presence of the filarial infestation did not, however, exclude the possibility that the pernicious lymphangitis might be a local syndromic expression of septicemic plague. Specimens of fresh blood were therefore collected from the patient at 9 p. m., January 28, and examined at 8 a. m. next day. We succeeded in confirming the presence of numerous embryos of the *Filaria nocturna* in the fresh specimens of peripheral blood.

Meanwhile the patient had died at 3 a. m. the same morning, during the coma and subnormal temperature following a period of delirium, convulsions, and hyperpyrexia of the afternoon and evening before.

Necropsy.—This was begun at 9 a. m. by Dr. Hernandez and myself, and lasted three hours. Specimens taken for histologic study were preserved, part in 90 or 95 per cent. alcohol and part in Zenker's fluid.

The subject was a child well constituted, apparently aged 12, and without any sign of traumatism of the skin, or ulcerated lesions of the trunk, or extremities. The post-mortem rigidity was complete, and lividity had begun to appear in several places, but principally in the inguine-abdominal region of the right side. This zone during life was the only location wherein there were local manifestation of pain and inflammation which would give rise to a reasonable suspicion of Yersinian infection as maintained at first by Dr. Dobal. Furthermore, in this region Dr. Hernandez had punctured a gland in seeking the necessary material for a bacteriologic diagnosis.

When exposed by dissection the cluster of glands in Scarpa's triangle as well as the inguinal group appeared intensely red and congested, some of them larger than normal, all lightly enveloped in a gelatinous substance, and on section exuded a transparent lymph. The redness and congestion and the lymphatic flow continued under Poupart's ligament along the line of the iliac vessels into the abdominal cavity. The right and left ganglionic group were dissected out and preserved, half of each being placed in alcohol, and the other half in Zenker's solution.

The lungs, heart and pericardium appeared normal. The thymus was very large. The right lung was removed, and blood-smears obtained from the parenchyma, specimens of which, removed from the vicinity of the hilum and from the lobules, were also preserved for future histologic study. Cultures and smears were made of the heart's blood. The hypertrophied thymus was extracted whole, divided into small pieces, and preserved. The liver, pancreas and spleen presented a normal color, but the kidneys were congested and enlarged, the mesenteric gland enlarged, and the retroperitoneal glands red, infarcted, infiltrated, and covered with an edematous cellular tissue. After resecting the gall-bladder, previously ligating the cystic duct and tributary vessels, in order to make cultures of its contents in the laboratory, we removed several fragments of the liver, which weighed 830 gm.

The spleen weighed 50 gm. Specimens of splenic pulp, obtained with aseptic precautions, were used to inoculate culture mediums. Another fragment was rubbed over the skin of the abdomen of two guinea-pigs, previously dry shaved and lightly scarified. Specimens of this organ and of the kidney and suprarenal capsules were also placed in the preserving fluid.

The dissection of the retroperitoneal glands was hastily done, owing to the advanced hour. Not being able to stop to make a minute and prolonged investigation, as would have been necessary in order to find and separate the harboring places of adult parasites, we limited ourselves to gathering the largest possible number of glands and their lymphatics, which we preserved in Zenker's fluid and alcohol. The same practice was adopted with reference to the mesenteric glands.

While Dr. Hernandez and I were advancing with our work of the necropsy, Dr. Gutierrez Igaravidez was rapidly examining a number of smears from the lung and heart, stained by the Romanowsky method, in all of which he found numerous microfilaria. While the slides from the lungs were literally crowded with embryos, those smeared with the blood of the heart exhibited a very considerable diminution in number.

The results of the bacterial and experimental investigation obtained with the specimens secured *intra vitam* and during the post-mortem examination were as follows:

1. The microscopic examination, made by Dr. Hernandez, demonstrated the absence of bipolar staining bacilli in the glandular substance, in the blood of the great vessels, and in the fluids of the viscera.
2. The incubation and the careful inspection, also attended to by Dr. Hernandez, of the special mediums inoculated for the purpose of bacteriologic diagnosis of the plague, were also absolutely negative.
3. The experimental inoculations of the guinea-pigs with the glandular fluids, *intra vitam*, and with the splenic pulp, taken post mortem, hypodermically in the former case, and by way of the skin in the latter, produced no alteration in the physical condition of the animals, and, therefore, after seven days must be considered negative.
4. The cultures made by us with the different culture mediums to ascertain if other micro-organisms were present in the blood of the heart, and in the contents of the gall-bladder, proved to be sterile after several days of incubation at 37 C.
5. The cultures of splenic pulp rapidly developed as typical colonies of *Bacillus coli communis*.

CONCLUSIONS

1. The patient died within a period of thirty-six hours from some pernicious paroxysm which was not of malarial origin.
2. The disease which caused this rapid death cannot be confounded, in spite of the painful adenitis of the right inguinal region, with one of the common forms of bubonic plague.
3. Such confusion could have been possible only with the septicemic form.
4. In case of a plague septicemic an early necropsy would have dispelled all doubts and thus fixed on the right diagnosis.
5. The clinical syndrome, and the unusual violence of the attack, inclined us to the theory of an endemic pernicious lymphangitis rather than of a plague septicemia.
6. My finding the embryos of *Filaria nocturna* in the urinary sediment of the patient was of value as confirming the theory.

7. The presence of a great number of microfilariae in the blood of the peripheral circulation, demonstrated in blood collected during the night, and confirming the findings in the analysis of the urine, proved without doubt the diagnosis of a filarian infestation.

8. The presence of a filariasis, however, did not exclude concomitant plague septicemia.

9. On this supposition the necropsy was the only means of resolving the doubt.

10. The lack of any visible pathologic alterations in the viscera, and especially in the spleen, liver, and lungs, dissipated all ideas of it being any form of bubonic plague.

11. The absence of Yersin's bacillus in the microscopic preparations obtained from the glandular fluids, *intra vitam*, and of the visceral pulp, post mortem, excluded definitely the probability of its being plague.

12. The entirely negative results of the experimental inoculating of guinea-pigs *intra vitam*, with the glandular fluids, and post mortem with the splenic pulp, and the failure of microbian colonies to develop in the mediums especially prepared from both, also definitely excluded the diagnosis of plague.

13. The absence of streptococci or staphylococci, and of all bacillary forms in the blood of the general circulation taken from the heart, excludes furthermore any such bacteriemia caused by aerobic microbes.

14. The presence of colon bacilli in the splenic pulp lacks importance and has no pathologic significance in this case, because it is a microbe which normally invades the organs, and especially the spleen a few hours after death. It must be taken into account, furthermore, that the necropsy was commenced six hours after death, and if this micro-organism had been in movement it would also have been found in the blood of the heart, and in the contents of the bile bladder.

15. Logically, therefore, according to the findings in the anatomico-pathologic examination, and the result of the bacteriologic investigation, the only real cause of the death of the child that can be accepted is endemic pernicious lymphangitis of filarial origin.

16. This fact has exceptional importance for the nosography of the country, because contrary to the general opinion of many investigators it proves (providing no other cause for the death can be found) that certain forms of filarial lymphangitis, without the assistance of other complicating micro-organisms, may *per se* rapidly kill their host.

17. It is also important because it shows the occurrence in Porto Rico of those grave and pernicious forms of tropical lymphangitis of filarial origin described by the Brazilian authors under the name of endemic lymphangitis, and by Mazaé-Azema, of the Ile de la Réunion, by the name of generalized intraganglionar lymphangitis.

Still more important is the fact that our diagnosis may be sustained without objection. If it is true, as the Brazilian authors and the physician of the Ile de la Réunion have it, that endemic plague exists in both countries, the lack of bacteriologic diagnosis would inevitably cause confusion between a typical form of plague and serious cases of elephantoid fever, whereas, in our case, this argument may be thrown aside, because the complete study, both microscopically and bacteriologically, ante mortem and post mortem, accomplished by competent and experienced physicians, and following procedures established in the laboratory for the diagnosis of bubonic plague, is the base on which I support my contention.

DISEASES CONNECTED WITH MECKEL'S DIVERTICULUM

WITH ESPECIAL REFERENCE TO DIVERTICULITIS *

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There occurred in my practice not long ago a case in which the combination of clinical manifestations and pathologic lesions was so unusual, so unexpected, and so misleading that it seems worthy of being recorded. It belongs in the category of diverticulitis, but seems almost unique in some respects. At least I have failed to find any case on record giving just the same symptom-complex.

Joseph C., aged 19 months when first seen by me, March 15, 1912, had been in good health and well nourished until in the preceding summer, when he suffered from a condition which his physician called "auto-intoxication," although he later spoke of "scurvy." Possibly both disorders had been experienced. He recovered and remained well until November, 1911, when he had a fall down stairs, but apparently without discoverable serious injury. A week later he began to suffer from slight attacks of indigestion. Early in January, 1912, the mother was alarmed to find on one occasion that the formed stool which the baby had passed was of a partly reddish color, and that when put into water it stained it a deep red. Previously to this there had been some constipation. The bowels now remained normal and without constipation for two weeks, when another reddish stool was passed similar to the one described. The child suffered also from attacks of abdominal pain which were supposed to depend on indigestion. February 16, he had an attack of complete suppression of urine lasting for over twenty-four hours. Catheterization showed the bladder to be empty. He then urinated very little for almost a week. There had been some slight drowsiness before the attack. There was no edema or nervous symptoms of any sort. At this time the mother noticed the change in the child's appearance, the former healthy tint having been replaced by a waxy whiteness which never afterward improved. After recovery from the suppression and oliguria, the attacks of paroxysmal abdominal pain continued to occur with greater frequency and constantly increasing severity, the child, when suffering most, often lying on the abdomen with the knees drawn up under him. Occasionally there was vomiting of thickly curdled milk. Constipation became troublesome, and bowel movements were obtained only by the use of purgatives, the expulsion of feces being accompanied by much flatus. A Philadelphia pediatrist was called in consultation, and made the diagnosis of anemia, which a blood-examination showed to be apparently of a secondary nature. Nothing was said to the parents of the importance of the blood-colored stools. Probably the existence of such stools had not been mentioned by them. Repeatedly since the attack of suppression the feces had been of a liver-color or a reddish brown. Nosebleed had occurred once a few days before I saw him.

At the time of my first visit the baby was in a dull mental state, looked very ill and was strikingly pale, but was without edema or evident wasting. Abdominal pain was severe, and the abdomen moderately tympanitic and tender. Just before the visit there had been passed by rectum a small dark-red blood-clot the size of a pigeon's egg, and the child had also vomited. The great weakness of the patient prohibited satisfactory examination, and the only diagnosis possible seemed to be that of secondary anemia dependent on repeated, or, perhaps, almost continuous, intestinal hemorrhage, generally of small amount at any one time. The cause of the hemorrhage was not certain, but ulceration of some portion of the intestinal tract seemed probable. The pain appeared to depend possibly on the tympanites, although this explanation was not entirely satisfactory. The significance of the attack of urinary suppression was not at all clear.

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* Read before the American Pediatric Society, May, 1914.

March 16: There had been three or four intestinal hemorrhages of considerable size during the preceding night accompanied by much abdominal pain. The child was seen with me on this day by Dr. J. H. Jopson, attending surgeon to the Children's Hospital of Philadelphia, who could discover no rectal disease or anything abnormal in the abdominal cavity, although the tympanites prevented to some extent a satisfactory investigation. The question of exploratory laparotomy was discussed, but the uncertainty of the diagnosis and the extremely weak condition of the patient made this seem inadvisable. A 10 per cent. gelatin solution was given freely by the mouth, albumin-water prescribed as the diet, and laudanum in 2-drop doses ordered as demanded by the pain. A hypodermic injection of 2 c.c. of horse-serum was administered by Dr. John Speese, in the effort to control the hemorrhage.

March 17: An examination of the blood made on this date by Dr. John Diven showed very rapid coagulation on puncture, a hemoglobin percentage of 22, red blood-cells 1,590,000, and leukocytes 7,840. The differential count (300 cells) gave polymorphonuclears 76 per cent., small lymphocytes 14 per cent., large mononuclears 5 per cent, transitionals 3 per cent., eosinophils 1 per cent, and basophils 1 per cent. There was poikilocytosis, but no nucleated red cells were found. The examination of the urine made by Dr. C. A. Fife showed a specific gravity of 1.016; acid reaction; no albumin or urobilin; trace of indican; uric acid and phosphate crystals, no casts or red or white blood-cells.

March 20:: There had been no return of hemorrhage, and the pain was better, without need for the laudanum. The general condition, likewise, had improved. The bowels had been opened daily by saline douches.

March 22: The child was very much better, and was sitting up out of bed.

March 27: Two days previously there had commenced a serious relapse in the condition of the patient, and the pain had been extremely severe; more than could in any way be accounted for by the tympanites. Some slight evidence of blood had appeared in the stools. Castor oil was administered on the day previous, and a very large mass of cheese-like consistency was passed, of a most offensive odor but apparently not containing blood. The child died exhausted on the 27th. During the attack there had been a moderate irregular febrile reaction.

The final clinical diagnosis was that of secondary hemorrhage depending on ulceration somewhere in the intestinal tract. The cause of the severe pain was not clear. A necropsy was made by Dr. Howard C. Carpenter, whose report reads as follows:

"On opening the abdomen a localized peritonitis was seen just below the umbilicus. This localized peritonitis could have been placed in a circle having a diameter of 8 cm. In this area four coils of intestine were firmly matted together, and the serous coat of the bowel showed a fibrinous peritonitis. When the coils were forcibly separated an abscess was discovered which contained a little more than 2 drams of pus. Further dissection allowed the pus to escape and revealed a Meckel's diverticulum in the center of the abscess-cavity. The diverticulum measured 3 cm. in length, and its walls were quite thick, averaging about 8 mm., but thinner at the tip. It was firm on palpation, giving the sensation characteristic of a chronic inflammatory process. The mucosa of the diverticulum was swollen and eroded, and at the tip of the organ there was found an ulcer 8 mm. in diameter. The opening between the ileum and the diverticulum was small but patulous. The distal extremity of the diverticulum was free. There was a purulent exudate at its tip on the serous surface, corresponding in location to the ulcer on the mucous surface. The remainder of the intestine, including the appendix vermiformis appeared normal. The mesenteric glands were somewhat enlarged but without evidence of suppuration. The liver was normal in size but yellowish in color, showing a fatty infiltration. There were no metastatic abscesses discovered. The spleen was normal. The kidneys showed an acute diffuse nephritis. They were moderately enlarged and red in color, with a wide cortex containing reddish streaks."

We have here, then, probably primarily an ulcerative inflammation of Meckel's diverticulum which was the cause of the persistent leaking of blood from the bowel, and of the severe anemia. As time elapsed, this inflammation extended to the serous layer of the diverticulum, producing a secondary, purulent peritonitis, localized by the matting of the coils of the ileum around the seat of suppuration. The severe abdominal pain was due to this peritonitis, and in part, perhaps, to the kinking of the intestine, making evacuation of the bowel difficult, and accounting for the constipation. The origin and bearing of the nephritis was uncertain. It appeared to have had little part in the final complex of symptoms and the fatal termination.

Meckel's diverticulum, the remains of the omphalomesenteric duct, although bearing the name of this investigator, was in reality, according to Fitz,[1] known earlier, being illustrated by Ruysch[2] in 1701. The organ may cause disease in various ways. The subject has been studied in its various aspects by numerous writers, among whom I may mention Rayer,[3] Fitz,[1] Kelynack,[4] Payr,[5] Hilgenreiner,[6] Porter,[7] Bunts,[8] Turner,[9] Clogg,[10] Forgue and Riche,[11] Gray,[12] Carnett,[13] Drummond,[14] Hertzler and Gibson,[15] and Wellington.[16] I shall, therefore, make no attempt at any exhaustive reference to the literature of the subject with details of reported cases.

None of the affections of Meckel's diverticulum appear to be of common occurrence, although a persistence of the organ in some form is found in from 1 to 2 per cent. of all persons. Thus Kelynack[4] found the diverticulum present in 13 out of 1,248 subjects examined (about 1 per cent.); the committee of the Anatomical Society of Great Britain and Ireland[17] 16 times in 769 bodies (a little over 2 per cent.); and Mitchell[18] 39 times in 1,635 bodies. Hilgenreiner[6] gives statistics on 4,848 necropsies, reported by a number of investigators, with 90 having diverticula, about 1 in every 54 persons; and Bienvenue[19] in a similar manner analyzed a series of necropsy-statistics and found 126 instances of the persistence of Meckel's diverticulum in 9,672 necropsies, or 1.7 per cent. The organ is present much more frequently in males. Of Mitchell's[18] 39 cases, 34 were in males. In Turner's[9] 145 cases in which the diverticulum was merely a postmortem finding, without pathologic alteration, the distal extremity was attached to some region in only 9 instances. On the other hand, in 161 cases with pathologic changes it was attached in 110.

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1. Fitz: Am. Jour. Med. Sc., 1884, lxxxviii, 30.
2. Ruysch. Thesaurus Anatomicus, 1701, vii, Fig. 283 (quoted by Fitz).
3. Rayer: Arch. gén. de méd., 1824, v, 80.
4. Kelynack: Manch. Med. Chron., August, 1896, p. 338.
5. Payr: Verhandl. d. deutsch. Gesellsch. f. Chir., 1902, xxxi, 347.
6. Hilgenreiner: Beitr. z. klin. Chir., 1902, xxxiii, 702; 1903, xl, 99.
7. Porter, Miles F.: Abdominal Crises by Meckel's Diverticulum, The Journal A. M. A., Sept. 23, 1905, p. 883.
8. Bunts: Ann. Surg., 1904, xl, 536.
9. Turner: Guy's Hosp. Rep., 1906, lx, 279.
10. Clogg: Brit. Jour. Child. Dis., 1906, iii, 41; 1911, viii, 405.
11. Forgue and Riche: Le diverticule de Meckel, 1907.
12. Gray: Brit. Med. Jour., 1907, ii, 823; 1908, ii, 909.
13. Carnett: Therap. Gaz., 1910, xxxiv, 77.
14. Drummond: Surg., Gynec. and Obst., 1913, xvi, 656.
15. Hertzler and Gibson: Am. Jour. Med. Sc., 1913, cxlvi, 364.
16. Wellington: Surg., Gynec. and Obst., 1913, xvi, 74.
17. Committee of the Anatomical Society of Great Britain and Ireland: Jour. Anat. and Phys., 1891-1892, xxvi, 91.
18. Mitchell: Jour. Anat. and Phys., 1897-1898, xxxii, 675.
19. Bienvenue: Thèse de Paris, 1912.

As a rule, the presence of Meckel's diverticulum gives rise to no symptoms whatever, and this is particularly true, as just pointed out, when it lies distally free in the abdominal cavity. A number of series of cases have been published, however, in which the organ occasioned symptoms of disease. Thus Porter[7] details 184 collected reports of cases of disease of the diverticulum, although he found others on record with too meager a description to render them of value for study. Forgue and Riche[11] collected 287 cases of intestinal obstruction by Meckel's diverticulum, and Wellington[16] 326 cases of disease of the organ. The largest series of reported cases of pathologic conditions of the diverticulum appears to be that by Rostowzew[20] of 634 cases. I have not had access to his original publications.

Lesions due to Meckel's diverticulum seem oftenest to produce symptoms in adult life, the average age of Porter's[7] patients being 21 years and 9 months. Bienvenue,[19] however, thinks that the greatest number of pathologic changes occur in childhood. Males are more frequently affected than females; in 265 of Wellington's[16] cases in which the sex was mentioned, there were 201 males and 64 females.

1. The most frequent lesion found is *strangulation of the intestine by the diverticulum or its remains,* usually attached to the umbilicus or to some part of the intestine, mesentery or other region. In cases of obstruction by Meckel's diverticulum, Hilgenreiner[6] found the organ attached distally in the proportion of about 4 attached to 1 free, with the attachment most frequently to the mesentery. The diverticulum may either be in the form of a fibrous, cord-like remainder of the organ, or have its lumen still present, through all or a part of its extent. In either case the ileum becomes ensnared in various ways, causing constriction and strangulation. Although a considerable number of such cases are reported in medical literature, the lesion is yet uncommon enough to produce probably a sensation of surprise in any physician discovering it. My own experience is limited to a single case made certain by necropsy. Of Porter's[7] 184 cases of obstruction by Meckel's diverticulum, 101 were due to the presence of a constricting band; and this was true, likewise, in 144 of Wellington's[16] 326 cases, not including intussusception of the diverticulum or volvulus.

The symptoms are those characteristic of most varieties of intestinal obstruction, with the exception of ordinary ileocecal intussusception, and it is only by operative interference or at necropsy that the diagnosis can be made with certainty. Intestinal obstruction due to this cause may occur in early life or later. There has been a division of opinion as to which period is more common. Forgue and Riche[11] and Hilgenreiner[6] agree that the most frequent age is from 15 to 25 years, and the weight of opinion seems to be in favor of this view. It is estimated by Halstead,[21] on the basis of 991 collected cases of strangulation of the intestine from different causes, that 6 per cent. are dependent on Meckel's diverticulum. On the other hand, of the 669 cases of obstruction by bands occurring in the London Hospital during 13 years (Barnard[22]) but 21 (3.14 per cent.) were due to the diverticulum.

It is to be remembered that strangulation of the ileum by a Meckel diverticulum is in a way retroactive, and the diverticulum in its turn, if it has retained its original character, may become strangulated by the ileum.

2. Another condition, properly a malformation, and naturally always congenital, is the persistence of Meckel's diverticulum with an *opening at the umbilicus.* This is unusual, and the subjects are nearly always males. Wellington[16] found but 21 instances in his 326 cases of disease of the diverticulum. Strasser's[23] statistics included a larger number, 63 in all. The lesion results in a fecal fistula through which feces may be discharged, or even, as in some reported cases, intestinal worms. The mucous membrane of the diverticulum protrudes at the umbilicus, forming a tumor, generally small, sometimes of larger size. The fistula is single and centrally situated, or sometimes, if the tumor is very large, there are two lateral openings. Occasionally, the intestine may protrude and become strangulated. Sometimes a persistent Meckel's diverticulum is obliterated near the intestine, and in this event mucus, but no feces, is discharged from the fistulous umbilical opening.

3. Among other unusual conditions sometimes found is the *formation of a cystic tumor,* the diverticulum being obliterated at both ends, as in the cases reported by Fox[24] and by Cawardine.[25] In the latter there was a cystic dilatation of the diverticulum in a new-born infant, filled with meconium.

4. *Concretions* of smaller or larger size may be present in the diverticulum. This was well illustrated in the case of Beach[26] in which there was a fecal concretion the size of a pigeon's egg, with communication through the diverticulum between the intestine and the bladder. In a necropsy reported by Sherren,[27] many small black calculi were found in the diverticulum. Similarly, as in the case of the appendix, foreign bodies of various sorts have been reported present.

5. A very unusual condition is described by Bland Sutton[28] in which there is a *superinvolution of the diverticulum,* as a result of which narrowing of the intestine is produced, the obliterative process in the diverticulum having passed beyond this region to the ileum.

6. In other cases a stenosis of the ileum may be caused by *traction* of a short diverticulum attached at its distal extremity or elsewhere.

A Meckel diverticulum persisting as a short, free organ may give rise to trouble in various ways:

7. Here is to be mentioned the rare *invagination of the diverticulum,* which is very liable to be followed by an ileocecal intussusception. Cheyne[29] collected reports of 16 cases of such intussusception. Twenty of Porter's[7] 184 cases were intussusception, and 59 of Wellington's[16] 326. Hertzler and Gibson[15] have recently published a careful review of the subject with the details in abstract of 41 collected cases, omitting others not sufficiently well-reported to permit of study The average age was 13 years, in sharp contrast to the early age at which simple intussusception of the bowel usually occurs. Inasmuch as the invagination of the diverticulum takes place on the lateral aspect of the

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[20] Rostowzew: Roussky Arch. Path., April, 1902 (quoted by Bienvenue); Beilage zur Praktitschewskaja Medicina, 1907 (quoted by Meyer).

[21] Halstead: Ann. Surg., 1902, xxxv, 471.

[22] Barnard: Allbutt and Rolleston's System of Medicine, 1907, iii, 770.

[23] Strasser: Med. Rec., New York, 1903, lxiv, 933.

[24] Fox: Lancet, London, 1898, i, 227.

[25] Cawardine: Brit. Med. Jour., 1897, ii, 1637.

[26] Beach: Ann. Surg., 1896, xxiv, 484.

[27] Sherren: Roy. Soc. Med., 1909-1910, iii, 1; Clinical Section, p. 11.

[28] Sutton: Brit. Med. Jour., 1891, i, 343.

[29] Cheyne: Ann. Surg., 1904, xl, 796.

ileum, it may not occasion complete obstruction, but merely project into the lumen of the bowel and cause hemorrhage. This hemorrhage is usually slight, and there are none of the symptoms of diverticulitis pointing to this disorder. In other cases intussusception of the bowel promptly follows that of the diverticulum.

8. Still less common than intussusception is *volvulus of the diverticulum, or of the ileum,* depending on the presence of this organ. But 8 of Porter's[7] 184 cases were of this nature. Wellington[16] gives in 326 cases 9 of volvulus of the intestine dependent on Meckel's diverticulum. Very rarely there may be volvulus of the diverticulum without twisting of the bowel. This was seen, for instance, in a case reported by Fox,[21] and in one by Taylor.[30] Cawardine's[25] case of cystic dilatation already mentioned was produced by a volvulus of the base of the diverticulum occurring during fetal life. Volvulus of the diverticulum or of the ileum is more liable to take place if the distal extremity of the diverticulum is attached.

9. *Hernia of the diverticulum* is occasionally seen. This has been studied by Ekehorn,[31] who collected 22 cases, and later by Gray,[12] who has a list from literature of 42 cases. There were others found by Gray, making the number 60 in all, but too briefly reported to be of value for study. Thirty of his cases were inguinal and 12 femoral. The average age was 37 years.

10. *Inflammation of Meckel's Diverticulum* — the subject under special consideration in this contribution — appears to have first been named "diverticulitis" by Blanc[32] in recognition of the analogy which it bears to appendicitis. The first case on record, according to Bienvenue,[19] appears to have been reported by Littré[33] in 1700. The subject has secured meager consideration or none at all in such text-books on medicine or pediatrics as I have consulted. A number of special contributions, however, have appeared in periodical literature or in theses treating solely or largely of this condition. I may refer especially to the theses of H. Blanc,[32] Bienvenue[19] and Ketteler,[34] the volume of Forgue and Riche,[11] and the periodical contributions of Clogg,[10] Rebentisch,[35] Hilgenreiner,[6] Denecke,[36] Meyer,[37] Cahier[38] and Hübschmann.[39] Some of the other writers already mentioned have discussed it to a limited extent.

The condition is one of the more infrequent abdominal diseases depending on Meckel's diverticulum. Ketteler[34] (1900) found 5 cases of diverticulitis; Denecke[36] (1902), 9; Rostowzew[20] (1902), 45; Porter[7] (1905), 17; Cahier[38] (1906), 39; Forgue and Riche[11] (1907), 59; Bienvenue[19] (1912), 40, and Wellington[16] (1913), 50. The variation in the reports depends in part on the date of publication, and in part on the limitations placed by the authors. It is interesting to note the relative tendencies, respectively, of the appendix to exhibit inflammation, and of the diverticulum to produce obstruction. Thus Leichtenstern[40] could collect but 36 cases of occlusion of the intestine by the appendix, while he found 70 cases of occlusion by the more rare Meckel's diverticulum. Inflammation of the appendix, on the other hand, is one of the most common disorders, while that of the diverticulum is of very exceptional occurrence.

The distinction is to be made at the outset between primary and secondary diverticulitis. In the latter some other lesion develops first, as when the diverticulum constricts the ileum and is in turn constricted by it, with consequent inflammation, or as when the diverticulum is strangulated in a hernial sac. In the matter of primary diverticulitis a further distinction is to be made between acute and chronic or recurring cases, and the relationship of diverticulitis to obstruction of the bowel is to be studied. Bienvenue,[19] the author of one of the latest and, perhaps, of the most extensive discussion of diverticulitis, gives as instances of chronic inflammation of the diverticulum those cases in which adhesion of the distal end of the diverticulum elsewhere than the umbilicus has at some previous time formed, as a result, he believes, of an earlier localized inflammation. On this basis he considers that the majority of instances of intestinal obstruction by the diverticulum acting as a constricting band are to be viewed as secondary to diverticulitis. Others, however, among them Forgue and Riche,[11] do not consider that these abnormal adhesions are necessarily or even usually the result of an earlier inflammation. However this may be, the chronic and the acute diverticulitis as now under consideration are quite different from this condition and are rarely the cause of a complete intestinal occlusion.

The *causes* of diverticulitis are obscure. Infection, of course, lies at the basis of the lesion. Previous digestive disturbances appear to have some bearing, and trauma, too, has seemed to have been causative in several instances, as in those of Hübschmann,[39] Kramer[41] and a few others. It should be remarked, however, that Hübschmann does not consider his case an instance of primary inflammation of Meckel's diverticulum, but of the formation of a peptic ulcer in it, following a fissure produced by the trauma, with subsequent perforative peritonitis. The influence of foreign bodies is uncertain. They have been found in a number of instances; but, as with appendicitis, they are not necessarily the cause of the inflammation. This is true also of the occasional discovery of intestinal worms in the diverticulum in cases of inflammation. Cahier[38] found foreign bodies present in 9 of 29 collected cases. Although the disease can occur at any age, the larger number appear to have developed after childhood is passed. Meyer[37] places the age of the majority of patients at from 35 to 70 years, and of Cahier's[38] 36 patients, 16 were from 20 to 54 years of age, one-third of the number being children.

From the point of view of *pathology,* diverticulitis is analogous to appendicitis, and no detailed description of the lesion is necessary. As in appendicitis, all grades of inflammation exist, extending from a mere catarrhal process to gangrene and perforation with localized or general peritonitis. There may be perforation from ulceration without gangrene. This is oftenest the result of typhoid fever. Wellington[16] collected 6 instances of this occurrence, and 2 from trauma. Makins[42] found a diverticulum with 13 perforations. Ulceration from any source is uncommon.

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30. Taylor: Johns Hopkins Hosp. Bull., 1901, xii, 326.
31. Ekehorn: Arch. f. klin. Chir., 1901, lxiv, 115.
32. Blanc, H.: Thèse de Paris, 1899.
33. Littré: Mém. Acad. Roy. des sc., Paris, 1719, p. 300 (quoted by Bienvenue).
34. Ketteler: Inaug. Diss., Göttingen, 1900 (quoted by Meyer).
35. Rebentisch: Arch. f. klin. Chir., 1903, lxx, 1015.
36. Denecke: Deutsch. Ztschr. f. Chir., 1902, lxii, 523.
37. Meyer: Deutsch. Ztschr. f. Chir., 1912, cxiii, 346.
38. Cahier: Rev. de Chir., 1906, xxxiv, 338, 550.
39. Hübschmann: München. med. Wchnschr., 1913, lx, 2051.
40. Leichtenstern: Ziemssen's Handbuch der specielle Pathologie und Therapie, 1876, vii, ii, 426, 427.
41. Kramer: Zentralbl. f. Chir., 1898, xxv, 521.
42. Makins: Tr. Path. Soc. London, 1893, xliv, 90.

The *symptoms* vary to a certain extent within wide limits. Cahier[38] found 10 chronic cases with acute recurrence out of 37 instances of diverticulitis. In these more subacute or chronic or recurring cases there exist before the final crisis evidences of gastric disturbances, constipation and recurrent painful attacks oftenest in the region to the right of the umbilicus or in the right iliac fossa. In the primarily acute cases, or in those with an acute development consecutive to the more chronic condition, the symptoms so closely simulate those of acute appendicitis that the diagnosis of the latter condition is generally made. The earliest stages of the disease may be entirely without clinical manifestations. In well-developed cases the symptoms consist in severe abdominal pain, which is liable to be higher and nearer the umbilicus than in appendicitis; abdominal tenderness and resistance, and finally, dulness on percussion in this region; nausea and vomiting; fever and leukocytosis. Constipation is a frequent symptom, but diarrhea is as often seen. In a few cases of a subacute or chronic nature, such as those of Hilgenreiner, Hübschmann,[39] Meyer,[37] and my own, passage of blood from the bowel took place. My own case was most unusual in that the intestinal hemorrhage was for a time the most marked symptom, and was certainly one of the decided causes of the fatal ending. Finally, in diverticulitis there may develop the symptoms of a general peritonitis, as in cases of appendicitis. This is more liable to occur than in the latter affection. The question of intestinal obstruction as a symptom of diverticulitis has already been referred to. It is possible that obstruction may become complete from the compression of the intestine, if the diverticulum is distally adherent, or from inflammatory adhesions or kinking, or in other ways. This is, however, exceptional. More or less difficulty in the evacuation of the bowels is liable to occur in any case of diverticulitis, either from the mere kinking of the coils of the intestine involved in a localized peritonitis, or as a result of paralysis of peristalsis, as seen sometimes in appendicitis. How important a factor the latter may be is uncertain. Cahier,[38] for instance, believes thoroughly in its existence, while Meyer[37] thinks that it plays little part. In cases of secondary diverticulitis, complete obstruction may first take place, and later evidences of diverticulitis may develop, finally with localized or general peritonitis.

The question of the *diagnosis* of diverticulitis is of great interest. Is such a diagnosis possible? It is to be noted that the lesion has never been correctly diagnosed during life, although in a case reported by Karajan[43] it would seem that this might have been made. In this instance there were the symptoms suggesting appendicitis, but occurring in a man who had had in infancy up to the age of 3 years a fistulous opening of Meckel's diverticulum at the umbilicus. In general, the study of diagnosis leads mostly to discouragement. Certainly, at least, the effort to come to a correct conclusion should be made. The fact that the localized inflammation of a diverticulitis is situated most frequently in the lower part of the abdomen and toward the right makes the diagnosis of appendicitis more probable; and, as a matter of fact, most cases of diverticulitis have been thus diagnosed, and the true condition discovered only at operation. In a case reported by Hilgenreiner[6] both diverticulitis and appendicitis were present. The origin of the diverticulum, oftenest at from 1 to 3 feet above the cecum, and its attachment to a freely movable portion of the intestine, make its position in the abdominal cavity a very variable one, and the localization of symptoms is consequently subject to no fixed rule. In the cases of secondary diverticulitis in which complete intestinal obstruction has already occurred, the development of inflammatory symptoms is suggestive but not conclusive, since any form of intestinal obstruction may be followed by signs of peritoneal inflammation. The presence of blood in the stools, although of rare occurrence, is when present, suggestive of diverticulitis; yet this, too, is not conclusive, inasmuch as the symptom is in no way pathognomonic. The diagnostic features as based on the cases reported by different writers may be summarized as follows:

1. Localization of the pain and tenderness not so often at McBurney's point as somewhat higher and to the right of the umbilicus, or even about it, or in some entirely different region.
2. An area of puffiness or of firm resistance in this region.
3. Absence or slight degree of meteorism, at least early in the attack.
4. The presence of blood in the stools and in the vomited matter.
5. The earlier existence of an umbilical fistula, or of some malformation elsewhere in the body.

As regards the *prognosis,* it is impossible to reach accurate conclusions, owing to the fact that catarrhal diverticulitis, recovering, has never been recognized during life; and it is impossible to determine how often such a condition has existed. That a diverticulitis of this sort with recovery does actually occur is shown by operations and necropsies in which evidence of former inflammation has been found. The prognosis of acute severer cases is unfavorable. Cahier[40] found a mortality of 65 per cent. in 35 cases, all those patients recovering having been operated on. In 50 cases of Forgue and Riche's[11] list the mortality was 53 per cent. Wellington[16] estimated the mortality at 40 per cent.

Little need be said of treatment. The only legitimate one is operative. Inasmuch as even a healthy diverticulum is a much greater and more constant menace to life than an appendix in a similar condition, a Meckel diverticulum found in the course of an abdominal operation should be removed.

1810 Spruce Street.

Vaccination in New York—In order to form an idea as to how well the population of New York has been vaccinated, surveys were made of various groups in different sections. Information thus obtained regarding 12,437 persons shows that 12,096, or 96 per cent., had been vaccinated. The average time which had elapsed since the last vaccination was eleven years. Fifty persons, or .04 per cent., had had small-pox and 378, or 3 per cent., had never been vaccinated. Schoolchildren are well protected by vaccination which is required by law. Children under school age, however, constitute a large proportion of the unvaccinated. Of a total of 1,580 children inquired about, 291, or 18 per cent., had never been vaccinated. In a negro tenement block 35 per cent. of the children under school age had not been vaccinated. A campaign has been set on foot to secure more complete vaccination of the entire population.

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45. Karajan: Wien. klin. Wchnschr., 1901, xiv, 714.

nerves of the lower extremity. They found that the tolerance was greatly increased by injecting the fluid slowly (over a period of from ten to fifteen minutes). Nevertheless, toxic symptoms appeared in a few of their cases. It was stated in the preceding paragraph that trauma to the brachial plexus may have caused the collapse of the patient. There can be little doubt of a certain amount of injury from injecting from 10 to 20 c.c. of fluid into a close-meshed plexus of nerves. It is well known that external violence applied to the brachial plexus sometimes results in a symptom-complex similar to that of my case. Despite these suggestions for the traumatic origin of the symptoms, it does not appear at all probable that injury was the cause of the manifestations. Were it so, collapse symptoms would be frequently observed. Besides, it is difficult to conceive the trauma profound enough to result in the symptoms in question. If all the fluid were injected into a single nerve-trunk, the trauma would possibly have been sufficient; the complete anesthesia of the arm, however, indicated that fluid was injected about several of the nerves. I must therefore conclude that the collapse of the reported patient was most probably due to acute novocain-poisoning, although trauma cannot be absolutely excluded as the cause.

From the experience of others and my own limited trial of the method it may fairly be stated that supraclavicular anesthetization of the brachial plexus will prove an exceedingly valuable addition to the methods of regional anesthesia when serious complications from its administration can be eliminated.

1275 Madison Ave.

BEST METHODS OF DISCOURAGING THE ACTIVITY OF INOPERABLE CANCER

A STUDY OF HEAT IN CANCER *

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Among the earliest of the various procedures used in the treatment of malignant growths is the Chian turpentine advocated by Clay of Birmingham; there has been developed since then the molasses treatment; soap solution and ox-gall; cancroin, a poisonous product of cancer-tissue; thyroid extract; trypsin and amylopsin as strongly recommended by Beard; atoxyl by Skene Keith; Reicher's injection of epinephrin into the tissues about carcinomatous growth; Spiess' "337," an anesthetic not on the market, similar in chemical structure to novocain, by which Spiess obtained brilliant results in the carcinomas of mice, and Uhlenhuth's injection of pyocyanase. And now, among the most promising, at least from the laboratory point of view, are the selenium and tellurium compounds of eosin introduced by Wassermann and based on the fundamental work of Ehrlich. With these can also be considered the use of the colloids of certain metals, especially silver, copper and gold, as described by Caspari, Neuberg and Loeb. Under this general subdivision may also be placed serotherapy, namely, the fetal autolysates of Fischera and emulsions of Levin and Babcock; organ extracts treated by the Roentgen ray and autoserotherapy as described by Hodenpyl and Ill. These methods have excited great interest from the point of view of the experimental laboratory. This has been especially true of the fetal autolysates of Fischera, which, from the scientific point of view at least, have much to commend them.

Among the rest may be mentioned the serum of animals treated with cancer by Jensen; autolysated sarcoma by Blumenthal; epinephrin and antivenin horse-serum of Greenbaum, and defibrinated blood by H. C. Ross and Bier. I purposely omit a bibliography as not being germane to the subject-matter, and would refer the reader to the status of carcinoma therapy as given in the *Reports of the American Association for the Study of Cancer*, 1913.

In spite of our wishes and hopes, all of these methods have proved to be inconstant in their effects, and therefore unreliable and disappointing. From the general agents used in attempts to destroy carcinoma, such as these just mentioned, we can pass to those employed locally. Among the first is probably arsenic, and its history is neither unimportant nor disappointing, although it has been badly used in many instances. With the arsenic, zinc chlorid, calcium carbid and acetone have also been employed.

The Roentgen ray has played an important part in the local treatment of cancer, and it is probable that it is destined to play a greater rôle if the work of Baum of Berlin and that of Kroenig and Gauss of Freiburg holds up its early promise. That the Roentgen ray will inhibit and destroy the carcinoma cell, or germ, under favorable conditions, there can be no reasonable doubt. There remains for the physicist only the problem of making the rays reach in an effective way the most inaccessible regions of the body, the habitat of cancer.[1]

Radium also comes in this category. In reference to this agent, all that can be said at present is to express the hope that at least half the enthusiasm shown by the few who have had the rare opportunity of using it in large quantities will prove to be justified by subsequent results. Various modifications of the electric current also deserve recognition in the local treatment of cancer. With these, as with the Roentgen ray, the problem is also one of sufficient penetration to destroy the pathologic tissue, and leave, with the least amount of damage, the uninvolved tissue-cells. There are many of these methods. The most attractive, and, perhaps, the most promising, is the so-called fulguration method of de Keating-Hart, and also his thermoradiotherapy method. The diathermy system of Nagelschmidt and the electrocoagulation developed by Doyen of France belong to this same type. That these are scientific and based on good theoretical, as well as experimental data, there can be no question.

Finally, we have, as a last hope in the management of inoperable carcinoma, the operative treatment so well set forth by Mr. Cecil Rowntree.[2] The essence of this author's paper is the relief of suffering by the excision of the growth as far as possible, without too greatly endangering the life of the patient. Added to this is the expectation that death by metastasis will be more merciful than ulceration and septic absorption.

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* Read before the Western Surgical Association, Dec. 19-20, 1913.

[1] Recently my attention has been called to a new and powerful Roentgen-ray tube devised by W. D. Coolidge, and described in the American Journal of Roentgenology, January, 1914, p. 115. In the same journal, p. 125, Dr. Lewis Gregory Cole gives "A Preliminary Report on the Diagnostic and Therapeutic Application of the Coolidge Tube." He closes his report with the following: "With these forces under control, there is no limitation to the amount of ray at our command, and with the cross-fire method of application and the screen materially increased, there is every reason to hope that we may be able to apply to internal cancers the same amount of x-ray which, when applied to superficial cancers, has caused their immediate disappearance." This statement of Professor Cole leads one to believe that the physicist had already made it possible for "the rays to reach in an effective way the most inaccessible regions of the body."

[2] Rowntree, Cecil: Brit. Med. Jour., Sept. 27, 1913.

As already stated above, under the head of general methods, these various procedures, although of the highest scientific interest, are too indirect for consideration in a practical way at this time. In an effort to determine an agent, aside from surgical means, to eradicate carcinoma, numerous observations have been made on the vulnerability of cancer-cells to various physical and chemical agents. In 1905, Haaland,[3] in attempting to obtain artificial purification of mixed tumors, following the suggestion of P. Ehrlich, showed the susceptibility of inoculable material to heat of 44 C. (111.2 F.) for half an hour. Ehrlich suggests that with higher temperatures, fewer and fewer cells survive. Haaland likewise showed that carcinoma-cells succumb before sarcoma. Clowes[4] demonstrated the death of all tumor-cells exposed to a temperature of 45 C. (113 F.) *in vitro*, and called attention to the fact that weak strains of tumors increase in virulence when incubated at from 38.5 to 41 C. (from 101.3 to 105.8 F.), while the opposite is true of strong strains.

Jensen[5] has placed the vulnerability of cancer cells at 47 C. (116.6 F.) for five minutes; Loeb for sarcoma 45 C. for thirty minutes; Clowes and Baeslack 44 C. for thirty minutes.

Lambert[6] has recently pointed out that temperatures above 42 C. (107.6 F.) were distinctly harmful, and that the degree of injury to both normal and cancer-tissue depends on the degree of temperature and length of exposure. He further states that sarcoma-cells are destroyed by exposure to 42.5 C. (108.5 F.) for from twenty-four to forty-eight hours, 43 C. (109.4 F.) for six hours, 44 C. (111.2 F.) for fifty minutes and 46 C. (114.8 F.) for twenty minutes; while normal connective-tissue cells survive these various exposures.

M. Doyen, in proposing the *Micrococcus neoformans* as the cause of carcinoma, showed that the death-point of cancer-cells is from 55 to 56 C. (131 to 132.8 F.), identical with that of the *Micrococcus neoformans.*

E. Vidal[7] noted the arrested evolution of tumors in four patients with a temperature above 40 C. (104 F.). In order to be sure that there was not a quadruple coincidence, he daily exposed tumor-bearing mice to temperatures above normal, and found that they lived longer and that the tumors were the seat of degenerative changes. In a bitch having a spontaneous lymphosarcoma, the zone of Richet was punctured, the temperature rose to 40.8 C. (105.3 F.) and the tumor diminished in size rapidly and finally disappeared some time after this procedure. In this connection Vidal makes the startling and original observation that the methods of treating carcinoma by vaccines and toxins, such as the nectrianin of Bra, Doyen's *Micrococcus neoformans* vaccine, toxins of Coley, vaccine of Otto Schmidt, etc., are all attended by a reaction, the principal symptom of which is an increase of temperature, and when such reaction is absent, the several authors state that there is no salutary influence on the carcinoma. He therefore concludes that these various methods owe their success largely to their fever-producing qualities. It may here be mentioned that Bier[8] has shown that the injection of a foreign defibrinated blood is attended by fever, and it is well known that the intravenous injections of colloidal metals show the same reaction. The various reports of diminution of malignant tumors following infections, such as erysipelas, assume a new significance.

Based on the foregoing experimental data, it is logical that we hope for the eradication of cancerous growths by attacking these morbid processes through their vulnerability to heat. It is immediately apparent that methods tending to raise the general temperature of the body above 104 F. (40 C.) are at times dangerous, always uncertain and beyond the power of regulation. It, therefore, remains to develop a method of applying heat to the tumor mass to a degree of efficiency that will permit of the greatest destruction of carcinoma-cells with a maximum conservation of normal tissue-cells. The methods which may be enumerated to obtain these results are hot air, hot water, electrocoagulation, fulguration and actual cautery. The first two may be readily dismissed, because the penetration of hot water, as shown by Doyen,[9] is from but 4 to 5 mm., and that of hot air is probably much less. Electrocoagulation will produce a coagulation of tissues from 5 to 8 cm. in two minutes, when the electrode is in immediate contact with the tissues. The rapidity of this action, the inability to direct and control the electrode within the cavities, aside from the costly and complicated apparatus required, together with the refinement of technic and specialized judgment of the operator, make this method impracticable in the treatment of the cavity carcinoma.

In considering the de Keating-Hart method of fulguration, a method applicable to superficial growths after their surgical removal, it is not amiss to call attention to the work of Durig and Grau,[10] who show that the effects of the application of high-frequency currents is due to heat alone, and not to any specific action on the tissue-cells. In comparison with the difficulties of the application of the foregoing methods, I have devised a practical method for the application of heat in the treatment of carcinoma that has none of the objections that the various methods already enumerated have. The penetration of the heat by the method to be outlined can be definitely determined and regulated. Its applicability has almost no limitations, when the malignant process is at all accessible; the required apparatus is not expensive, and it is easily portable. The method to which I refer is the application of heat from an electrocautery, accurately controlled by a rheostat, and applied to the affected tissues.

In an effort to determine the degree of heat resulting from the application of the heating-irons for varying periods of time, the following experiments were performed:

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[3] Haaland, M.: Imperial Cancer Research Fund, Third Report, 1908.

[4] Clowes, G. H. A.: Brit. Med. Jour., December, 1906.

[5] Jensen, Loeb, Clowes, Baeslack: Quoted by Clowes: Annual Report of New York State Cancer Laboratory, 1910.

[6] Lambert, Robert A.: Demonstration of the Greater Susceptibility to Heat of Sarcoma Cells as Compared with Actively Proliferating Connective-Tissue Cells, The Journal A. M. A., Dec. 14, 1912, p. 2147.

[7] Vidal, E.: Travaux de la Deuxieme Conference Internationale pour L'Etude du Cancer, Paris, 1911, p. 160.

[8] Bier: Deutsch. med. Wchnschr., July 18, 1907, No. 29.

[9] Doyen: Quoted by Bainbridge, William Seaman: International Clinics, 1913, iii, 280, S. 23.

[10] Durig, A., and Grau, A.: Der Energieumsatz bei der Diathermie, Biochem. Ztschr., 1913, xlviii, 480. Quoted in The Effects of High-Frequency Currents, editorial, The Journal A. M. A., May 31, 1913, p. 1907.

Experiment 1.—Into a mass of fresh, tightly bound beef 7 inches in diameter and 6 inches thick, the largest electric cautery was allowed to burn its way under pressure. Two thermometers were forced into the mass at 1 and 2 inches' distance from the cautery, respectively, and the cautery was allowed to act continuously at constant heat for seventy-five minutes. Cross-section of the mass following the experiment showed just outside the area of actually destroyed tissue (charcoal) an area of coagulated tissue ¾ inch thick, and to the outer side of this, an intermediate pale grayish-pink zone ½ inch thick. In every instance the latter area was found to be to the inner side of the thermometer, which registered 55 C. (131 F.).

Experiment 2.—A similar cautery was forced into a mass of tightly bound beef-muscle measuring 3½ by 3½ by 3 inches, and allowed to act continuously at constant heat for sixty minutes, and with a thermometer placed in the mass at a distance of 1½ inches from the cautery. Cross-section of the mass then showed a coagulated zone ⅜ inch thick, and an intermediate zone ¼ inch thick. Thus there is seen the actual destruction of a mass of tissue measuring 2⅜ by 2⅜ by 3 inches.

In both of these experiments, frequent thermometer readings showed an almost constant rise of 0.5 degree C. per minute in the tissue within from 1 to 2 inches of the cautery.

Experiment 3.—The cautery, heated to a bright cherry red, was allowed to act for ten minutes within a mass of tightly bound beef-muscle. At the end of this time, cross-section showed a coagulated zone ¼ inch wide, and an intermediate zone ⅛ inch wide. This experiment illustrates most graphically the inhibition by the charcoal core of the dissemination of heat. High degrees of heat in the cautery head thus defeat the purpose of this technic, through the formation of an almost impenetrable carbon barrier. It is well to emphasize here the importance of Experiment 5, in which the tissues were not carbonized by high degrees of heat, with a resulting coagulation of the tissues throughout a far greater area.

Experiment 4.—This was the same as Experiment 3, with the cautery acting for thirty minutes. Cross-section then showed a coagulated zone of ¼ inch, and an intermediate zone of ¼ inch.

In all of the foregoing investigations, it is to be emphasized that the cautery was inserted hot, and allowed to act under high heat.

Experiment 5.—From the center of a mass of tightly bound beef-muscle 2½ inches in diameter and 3 inches thick, a core ½ inch in diameter was bored out. Into this the cold cautery was inserted and allowed to remain at a heat too low to cause charring of the tissue, for sixty minutes. At the end of this time, the entire mass was hot, and cross-section showed complete coagulation throughout the mass.

Experiment 6.—In this experiment, a mass of beef 3 by 3 by 4 inches was used, the object being to determine the time necessary entirely to destroy this mass by the cautery heat, combined with external pressure by forcing the tissue on the cautery, in this way stimulating the actual operation in my technic of applying heat to a carcinomatous uterus. The mass was held in the hands of an assistant, who exerted constant pressure toward the cautery acting at high heat within the mass. At the end of twenty-eight minutes, the entire lump was too hot to be held in the hands, and section showed nothing left but a charcoal shell surrounded by a rim of well-cooked coagulated tissue ⅜ inch in thickness.

Experiment 7.—From a large mass of beef-muscle, a core ¾ inch in diameter was bored and lined with a rubber glove. The opening of this cavity was then closed by a cork containing an inlet and a smaller outlet. To the inlet was connected an irrigator containing cold water, which was allowed to flow through the cavity in the meat. The heated cautery was then plunged into the mass at a distance of ½ inch from the cavity in which the cold water was flowing, and allowed to act for thirty minutes.

The object of this investigation was to determine the effect of cold water within a cavity in protecting directly contiguous tissue from coagulation by the heat from the cautery. Cross-section of the mass showed complete coagulation of all the tissue between the cautery and the cork inserted into the cavity, but a zone of unharmed tissue ⅛ inch wide along the edge of the water-cooled cavity.

From the foregoing experiments several important facts may be deduced. The temperature within the mass of tissue, measured at a distance of from 1 to 2 inches from the outside of the heating-iron, rose 0.5 degree C. per minute, the rheostat reading high. This fact affords a method for the relative measurement of heat during the cautery operation. The time of exposure and reading of the rheostat being the factors considered in the calculation. It will be seen that a considerable area of tissue, far beyond the zone of coagulation, was heated to a degree sufficient to kill carcinoma-cells.

The penetration of heat into a mass is dependent on the following factors: (1) the density of the mass; (2) the compression of the mass on the cautery; (3) the degree of heat developed and length of exposure, and (4) the type of entrance made for the cautery.

Experiment 5 shows in a startling manner that if a charcoal core is avoided, the area of coagulation far exceeds in size that ensuing from the application of greater heat for a longer period of time. In this experiment the cross-section shows that without carbonization, coagulation is produced 2½ inches in all directions from the surface of the heating-iron, the heat being applied for sixty minutes. When the iron was heated to a degree at which carbonization was produced, as in Experiment 2, again for sixty minutes, coagulation was produced for only ⅜ inch, and an intermediate zone of ¼ inch, making a total penetration of the heat into the beef mass of only ⅝ inch, in contrast to Experiment 5, with a much lower degree of heat, of 2½ inches from each side of the heating surface.

This emphasizes the caution which I have advanced on former occasions, not to produce too great a heat in the heating-iron; it is far better to develop a heat below the degree of carbonization, and allow it to act for a long time. As can readily be seen from these experiments, there are two methods by which a carcinomatous mass may be destroyed: first, that illustrated in Experiment 6, in which, with the heating-iron at high temperature, the mass is burned up, every angle being pressed on the cautery head by an assistant, and second, that illustrated by Experiment 5, in which the tissue is not burned up, but destroyed by the production of heat below the point of carbonization. Both procedures have a place in the operation. When a small, circumscribed and well-defined growth, unattended by pelvic metastasis, is present, the first method may well be used, particularly as a preliminary measure. When, however, the pelvis is filled with the cancer growth, the first method should not be employed, because the primary carbonization, I repeat, prevents in a remarkable way the dissemination of heat necessary to effective treatment of the cancer mass. In other words, the successful treatment of cancer depends more and more on the question of heat, and less and less on the effects of cauterization. There is another important consideration, which should guide us in reference to the prevention of the formation of the charcoal core at the point of contact with the cautery, namely, drainage. The charcoal not only prevents the scattering of the heat, but also interferes with subsequent drainage, which is a most important factor in the successful management of these cases. When the drainage is not adequate, the patient is in danger from absorption of the products of large quantities of killed cancer-cells. Wassermann has already called attention to this in the destroyed tumors of mice. He has shown that if the destroyed tumor in these animals was as large as, or larger than, a hazelnut, the animal died from intoxication from the lytic cancer-cells. If, however, the tumor was the size of a large pea, this result did not follow when it was destroyed. In two of my cases, I have observed intoxication of this character. In both of these cases the pelvis was full of secondary carcinoma following panhysterectomies. The heat was applied through the vagina, and in both instances there was a perfect primary recovery. After four days, however, each of these patients showed signs of failure, which was expressed by extreme weakness, which could not be explained by any local findings. There was also a rapid and weak heart-action, associated with syncopal attacks, vomiting, marked stupor and finally an acidosis. The second method is much more effective, carried out for a period of time varying with the size of the mass; the heat radiates from the heating-iron in a circumferential manner and penetrates the tissues as outlined in the foregoing experiments.

The scope of this paper and the tenor of its contents does not permit of a description of the various steps of my operation, the indications, contra-indications and the immediate, together with the final results. Permit me to refer to my two previous articles on this subject for this data.[11]

CONCLUSION

It has been my purpose to try to point out, through the medium of this paper, the widening of the field of investigation regarding the vulnerability of the cancer-cell to the effects of heat. It will be of particular interest to make further observations as to the relation of the reaction, producing heat in the body, following the injection of toxins, serums and vaccines in the destruction of carcinoma. If the primary gross mass of cancer which is usually accessible can be rendered innocuous by raising the temperature through the medium of an electic heating-iron, and the remaining small amount of lymphatic involvement be reached by thermic-raising, artificially produced toxins, serums or vaccines, as is emphasized by Vidal, then the dream of the ages, on the part of the physician, of doing something with cancer, will be on the road of realization.

Finally, it becomes necessary to develop the application of heat by a method which is at once efficient and harmless, and I believe that I have done this by the technic which I have developed. I believe, further, that I have accomplished this in such a way as to make it highly probable that many forms of carcinomatous growths may be eradicated.

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[11] Percy, James F.: The Results of the Treatment of Cancer of the Uterus by the Actual Cautery, with a Practical Method for Its Application, The Journal A. M. A., March 9, 1912, p. 696; A Method of Applying Heat Both to Inhibit and Destroy Inoperable Carcinoma of the Uterus and Vagina, Surg., Gynec. and Obst., September, 1913, p. 371.

DEEP WOUND OF BRAIN

F. H. Gunn, M.D., and H. C. Fairbrother, M.D.
East St. Louis, Ill.

Patient after recovery from deep wound of brain.

G. R., a Greek, aged 35, blacksmith, of robust physique, while engaged in a fight with another Greek, Dec. 27, 1913, received a stroke with an ordinary chopping-ax. As shown in the accompanying illustration, the head was literally split wide open. The skull was severed back to the coronal suture, and forward through the malar and superior maxillary bones down to the alveolar arch. The brain was severed about 1 inch to the left of the median line, through the frontal lobe back to a point near the fissure of Rolando. The left eye was cut through near the center. The patient was brought into the hospital, the head shaved and cleaned, the eye removed, the incision closed and secured with sutures and adhesives, and absolute rest enjoined. Perfect recovery followed without an untoward symptom. In five weeks the patient returned to work, and up to the present time, a period of three months, he has complained of no unfavorable symptom except occasional insomnia.

The Increase in the Number of the Insane.—Interesting statistics have been recently published by Dr. Magnan, head of the examination service of St. Anne's asylum, and by Dr. A. Fillassier, head of the statistics department of Paris, on the insane of the Department of the Seine.

During the period between 1871 and 1880, inclusive, the total number of cases of insanity in the Department of the Seine was 27,169. From 1881 to 1890, the cases furnished by the department numbered 41,288. During the third decennial period, from 1891 to 1900, the number of insane rose to 42,138. Finally, between 1901 and 1910, 43,035 cases of insanity were registered. Alcoholics formed more than a fourth of the number of insane. Of the 89,728 total admissions between 1887 and 1911 the number of alcoholics was 27,315.

The number of relapses, according to Magnan and Fillassier, is very high: in 1911, 15.3 per cent. for the men, and 11.3 per cent. for the women. Many of the relapses are due to alcoholism. Sometimes the cases are merely those of alcoholics who return to drinking, sometimes of degenerates who, from the effect of the poison, become insane anew. Among the exceptional relapses were those of some patients who entered St. Anne's fifteen, sixteen and seventeen and even forty times because of the abuse of intoxicants.

Of all the methods applied for the treatment of the various cases of insanity, Drs. Magnan and Fillassier believe that confinement to bed is the one which gives the best results. This method constitutes a considerable step in advance in the therapeutics of mental diseases. By confinement in bed the acute deliriums are improved, arrested and cured. Since 1897 a considerable diminution of suicides has been observed among men, and there have been none in the women's division. The amelioration of the maniac and melancholic condition is constant and often rapid. For the alcoholic, nothing can equal the value of confinement to bed.

New Instruments and Suggestions

ACROMION AUSCULTATION: A NEW AND DELICATE TEST IN THE EARLY DIAGNOSIS OF INCIPIENT PULMONARY TUBERCULOSIS

Frank A. Bryant, M.D., New York

The early recognition of physical signs in incipient pulmonary tuberculosis is a factor of such importance that the discussion of a new method of detecting conditions which produce slight pneumatic changes in lung-tissue should prove interesting.

The primary lesion in tuberculosis of the lungs is, as a rule, in one of the upper lobes (American System of Practical Medicine). In 427 successive cases of pneumonic tuberculosis examined at the Johns Hopkins Hospital, the right apex was involved in 172, the left in 130, and both in 111. This leaves only 14 cases out of 427 in which the initial lesion was elsewhere than at the apices.

It may be stated that phthisis in this locality is practically always caused by the aspirated tubercle. In this method of infection the tuberculous nodule is usually deposited just where the bronchiole loses its cartilaginous quality, becomes membranous and narrows down to enter the aveoli. Almost immediately (Osler, in Loomis-Thompson's Practice of Medicine) cell proliferation and tissue changes begin so that as early as the fifth day after infection, variations in the lumina of the air passages are sufficient to cause changes in the pitch of the respiratory note and prolonged expiration.

This early mechanical change in the walls of the smaller air-passages explains how by means of auscultation alone the very earliest evidences of infection and infiltration may be obtained, long before such a condition could be detected by percussion, cough, pallor, nocturnal perspiration and the more common signs by which lung tuberculosis is ordinarily diagnosed.

A new and delicate method of auscultation to which I desire to call additional attention and which has been described by Robert Abrahams and Nathan Magida, is called acromion auscultation (Abrahams, Robert: Auscultation at the Acromion Process: Its Significance in Apical Disease, *Arch. Diagnosis,* April, 1913. Magida, Nathan: Acromial Breathing as an Aid in the Diagnosis of Apical Pulmonary Tuberculosis, *New York Med. Jour.,* 1913, xcviii, 1261). It is, as its name implies, a process of listening with a bell-stethoscope (or stethophone, as some prefer to call this instrument) over the acromion processes of the scapulae and particularly over the clavicular-acromion arthroses. It is of such significant service in ascertaining the very earliest signs of the invasion of pulmonary tuberculosis, that I believe it should be given a high place among the classical and recognized signs of this disease, and command the attention and respect which its useful character deserves.

ACOUSTIC PRINCIPLES

Acromion auscultation is based on the principles involved in the production and transmission of sound. It is a fundamental law of physics (Avery, E. M.: Elements of Natural Philosophy) that all sound may be traced to the vibration of some material substance. The sounds heard by direct auscultation over lung-tissue are produced by vibrations or movements of air, and occasionally mucus, within its substance. As a medium for the transmission of these vibrations in acromion auscultation, we have, first, the clavicles. It is worthy of note that the name is derived from the Latin word for key, inasmuch as they help to unlock some problems in the physical examination of the upper chest.

The clavicles, on account of the connection at their inner ends with the manubrium and first ribs, whose posterior surfaces lie directly over lung-tissue, and with their own inner concave surfaces lying across and on the apices of the lungs, act like the sounding-board of a musical instrument whose office is to greatly increase the intensity of the original vibrations.

Sound waves produced in the lungs are thus picked up, and traveling longitudinally through the long axes of these bones, are, according to a principle in acoustics, reenforced by the blending of similar waves and sympathetic vibrations. As in the case of the violin, the result is an intensification and even increase in volume of sound at their acromion ends.

This multiplication of sound at the acromion is analogous to the fact that a tuning fork can be heard much louder if it be placed against the end of a rod whose opposite end is held against the ear. Another familiar illustration of such bone conductivity is the increased resonance heard as the razor in shaving glides over the rami of the inferior maxillary. The telephone is another extensive example of the same principle.

The same conditions and principles which apply to the clavicles anteriorly obtain in the relation that the large resonant surfaces of the upper portion of the scapulae bear to the lung-tissue which they cover and to the acromion processes. It is apparent, therefore, according to physical laws, what effective collectors, intensifiers and transmitters of adventitious apical sounds these two bones may become.

METHOD OF USE

The manner of its use is exceedingly simple. The bell of an ordinary stethoscope should be placed as nearly over a point corresponding to the junction of the clavicle with the acromion process as possible. The effect of ordinary respiration should first be observed, after which the patient should be told to deepen the natural breathing, to count, to whisper or to cough, according to whichever sign it is sought to make available, as in the direct auscultation of the apices.

If the anterior portion of an upper lobe be suspected, the examiner should then stand at the side of the patient and endeavor to cover with the stethoscope a portion of the outer or external end of the clavicle by applying the bell of the instrument as nearly as possible in conformity with its long axis.

This manner of applying the stethoscope is recommended because the inner end of the clavicle, articulating as it does with the manubrium and first rib, and being bound firmly to the rib by the aponeurosis of the subclavius muscle and the costoclavicular ligaments, forms a fairly broad, compact resonating surface in direct contact with the anterior portion of the upper lobe and its apex. This resonant mass of bone and fibrous tissue acts as a collector of sound-waves, which it transmits longitudinally outward along the clavicle to its acromial end.

If the posterior portion of the upper lobe or its apex is to be tested, the examiner should stand in front of the subject and place his instrument on and as nearly over the tip of the acromion process as he can. In this locality the supraspinous fossa above and the under surface of the great shell-like subscapular fossa below spreading out over this region, lying on the posterior surfaces of the upper ribs, which in turn through their pleurae come into contact with lung-tissue beneath, act as other resonators, gathering up, intensifying and transmitting sound impulses to the listener's ear at the acromion.

While the chief use of acromion auscultation is to be found in its use in the incipient stage before emaciation has taken place, yet it is desirable occasionally to use it in later stages of the disease and when there has been a loss of flesh. This often leaves the bony prominences of the shoulder so uneven that the bell of the stethoscope cannot be adjusted readily to the contour of the shoulder in a manner to exclude the external air.

At first a soft rubber bell was used on the stethoscope, but that absorbed the sounds to such an extent that its use had to be abandoned. Later I found that the ordinary hard rubber or metal bell could be used on these bony shoulders by simply drawing up the loose skin and tissues around the mouth of the stethoscope with the fingers of the disengaged hand sufficiently to make an air-tight adjustment. Care must be taken, however, to keep this skin cushion motionless, or else extraneous and confusing sounds will be heard.

Rarely, slight friction sounds produced by a movement of the parts in the clavicular-acromion arthrosis may be heard, and on account of their similarity to those of mucus râles and clicks, caution must be used to differentiate and exclude such sounds from those originating in the lungs. I would suggest that cases for examination at first be chosen from those which have already been diagnosed by other means as being tuberculous. For those unaccustomed to this method of examination, like the early study of heart murmurs, it will give greater satisfaction and confidence to begin the investigation with a known condition as a working hypothesis.

The bell stethoscope must always be used, because the phonendoscope, on account of its flat surface, cannot be adjusted to the rounded and sometimes bony prominences of the shoulder-joint.

ADVANTAGES

The primary and most valuable feature of this new method of auscultation is in its being an early indicator of apical invasion. Its basic principles are well adapted to collecting and transmitting to the ear pathognomonic sounds about the apices due to changes in the walls of the infundibula earlier in the history of the disease than they can be elicited in any other way.

In addition to this it is useful in determining the stage of the disease. In a stated number of cases of all stages of lung tuberculosis examined, acromion breathing was heard in all of the first-stage cases, in 57 per cent. of those in the second stage, and in only 2 per cent. of the third-stage cases. I have found it useful also in young, plethoric persons, in whom the presence of pathogenic bacilli is apt to be made known first by hemoptysis. In this class of cases there is frequently so much fatty tissue and muscle over the apices that little or nothing can be learned by direct auscultation or percussion. In such cases the value of acromion auscultation is emphasized.

62 West Fortieth Street.

MARCHI TECHNIC: SAFER AND EASIER CLEARING AND MOUNTING OF CELLOIDIN SECTIONS*

H. S. Steensland, M.D., Syracuse, N.Y.

This communication is presented on the assumption that, at present, chloroform is generally regarded as the best clearing reagent for Marchi celloidin sections. It is generally recommended that Marchi celloidin sections be cleared in chloroform and mounted in chloroform balsam because xylol and other clearing reagents, and xylol balsam, cause the black osmic acid staining of fat to fade. Clearing in chloroform, as recommended, presents certain well-known difficulties in technic. These difficulties sometimes make the fate of valuable material uncertain, for example, material that has been obtained as a result of painstaking and time-consuming experiment.

Obviously it would be a great advantage if such sections could be cleared in oleum origani cretici. The technical difficulties dependent on chloroform clearing would be overcome. There would be no danger of drying and shriveling of the sections. The sections could be thoroughly blotted and flattened with smooth (not embossed) filter-paper. The chloroform balsam could be carefully applied. The retraction of the balsam, on drying, from a part of the space between the cover-slips and the slides would be practically done away with. Dr. Mallory has informed me that this retraction can be still further guarded against by completely covering the sections on the slides with chloroform balsam and then allowing it to evaporate to a proper thickness before putting on the cover-slips. It would be possible to turn over valuable material to a technician for clearing and mounting with much less fear of loss of material and without placing undue responsibility and strain on the technician, especially in the case of large serial sections.

Marchi celloidin sections were placed in a dish of oleum origani cretici. Sections of Zenker-fixed tissue stained in hematoxylin and eosin were placed in another dish of the same oil. Oleum origani cretici is probably the most widely used clearing reagent for hematoxylin- and eosin-stained sections. At intervals, sections from each dish were mounted, the Marchi sections in chloroform balsam and the hematoxylin and eosin sections in xylol balsam. In the Marchi sections no evidence of fading was found after seven weeks in the oil. On the other hand, the hematoxylin and eosin sections had obviously faded.

Further, a large number of Marchi celloidin sections were mounted. The technic made use of was the usual technic except that the sections were cleared in oleum origani cretici instead of chloroform. At the end of ten years these show no evidence of fading on comparison with controls. The controls consist of new sections cut from the same set of blocks from which the oil-cleared sections were cut ten years ago. These control sections were cleared in chloroform.

Dr. Mallory has kindly examined the various sections mentioned above and has confirmed the observations.

CONCLUSION

Oleum origani cretici is a very much safer and easier clearing reagent than chloroform for celloidin sections to use in the Marchi technic. It is a safer clearing reagent for Marchi sections than it is for hematoxylin and eosin sections.

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* From the Department of Pathology, Syracuse University, College of Medicine.

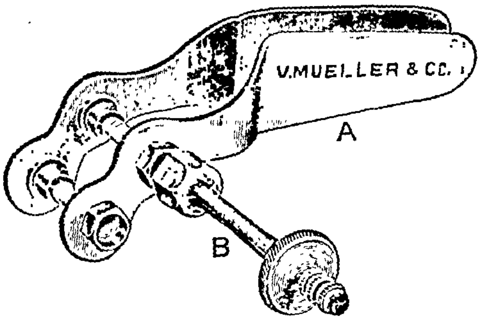
A NASAL SPLINT

E. P. Hall, M.D., Kansas City, Mo.

The suffering of the patient whose nasal chambers are tightly packed with gauze for the twenty-four to forty-eight hours following the submucous resection of the septum must be a consideration which presents itself to the mind of the rhinologist when advising this otherwise excellent procedure. The obstruction to drainage of the nasal secretions except by seepage through thoroughly saturated sponges; the absence of oxygen with its bacteria-inhibiting power and consequent protection against increased virulence of existing sinusitis, and the possibility of direct infection of the wound are conditions all against surgical principles, and condemn this method.

A satisfactory nasal splint would be one to hold the flaps securely in position, to prevent hemorrhage, to offer no obstruction to discharge of nasal secretions and to permit free nasal respiration. The instrument here illustrated, when applied in the manner described, I have found to meet these requirements.

When the operation is completed, a strip of Bernay's sponge three or four layers in thickness, cut to size of blades or a trifle wider, is placed on both sides of the septum and the blades of instrument are guided into position over these strips. The blades of the splint are not screwed tightly against the flaps, for the intervening packing affords the necessary elasticity to the splint to provide for the edema of tissue and to fix it immovably in position.



Nasal splint.

An adhesive-plaster strap is wound once around connecting bars and carried along the bridge of the nose to the forehead; this, with a cross-strap over the bridge, supports the weight of the extra nasal end of the splint. The screw-heads are grooved for insertion of a key to assist in turning the cogs to separate the blades when secretions and blood have cemented the working parts together.

Triangular plates held to grooves in the blades of the splint can be placed in position, taking care of a high operation should it be found necessary to support the entire flap.

The instrument may be so constructed that the blades are placed in position separately and then locked together. This is a later development of the device and preferable in that it is much easier to insert and remove without discomfort to the patient.

My experience justifies a recommendation of at least forty-eight hours for the length of time to leave the splint in position.

Models of this instrument are in the hands of V. Mueller & Co., Chicago.

New and Nonofficial Remedies

The following additional articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Their acceptance has been based largely on evidence supplied by the manufacturer or his agent and in part on investigation made by or under the direction of the Council. • Criticisms and corrections are asked for to aid in the revision of the matter before publication in the book "New and Nonofficial Remedies."

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation, but that, so far as known, it complies with the rules adopted by the Council.

W. A. Puckner, Secretary.

THIOCOL AND SYRUP THIOCOL, ROCHE

Report of the Council on Pharmacy and Chemistry

The following report, explaining the readmission of Thiocol and Syrup Thiocol, Roche, to New and Nonofficial Remedies, was adopted by the Council and authorized for publication.

W. A. Puckner, Secretary.

Seven years ago the Council accepted Thiocol for inclusion with New and Nonofficial Remedies (The Journal, Dec. 22, 1906, p. 2093) and later also a preparation of it, Syrup Thiocol, Roche (The Journal, Dec. 3, 1910, p. 1980.) About a year ago the Council learned that a preparation called Sirolin, containing Thiocol as its effective component, and practically the same as Syrup Thiocol, Roche, was being advertised to the public both in this country and abroad under grossly exaggerated claims. The Council directed that the matter be brought to the attention of the American agent for Thiocol preparations, the Hoffmann-LaRoche Chemical Works. This was done.

The agent's reply contained no promise that advertising in the lay press would be discontinued. As the Council holds that the advertising of medicinal products to the public is vicious in that it tends to encourage self-medication and the establishment of false security on the part of the public, the Council voted that Thiocol and Syrup Thiocol, Roche, be omitted from New and Nonofficial Remedies (The Journal, June 21, 1913, p. 1974).

Recently the following was received from the Hoffmann-LaRoche Chemical Works, New York:

> "All popular propaganda for Sirolin has been abandoned in Germany, Russia, Great Britain and the United States and there never has been any popular propaganda of Sirolin in France. We can at the same time state that there will not in future be any popular advertising or popular propaganda of any sort in behalf of Sirolin in the United States, Germany, Russia, Great Britain or France."

In view of the foregoing letter the Council has voted that Thiocol and Syrup Thiocol, Roche, be readmitted to New and Nonofficial Remedies.

NEW-BORNYVAL.—Neo-Bornyval.—New bornyval is borneol isovaleryl glycolate, $(CH_3)_2:CH.CH_2COO.CH_2.COO.C_{10}H_{17}$, the isovaleryl glycolic acid ester of borneol.

Actions and Uses.—New bornyval is more resisting to the gastric juice than bornyval, and is said to pass the stomach without decomposition and on this account it is said to be less irritating to the stomach than bornyval. In the intestine it is decomposed into borneol, and the salts of valeric acid and glycolic acid.

The actions and uses of new bornyval are similar to those of bornyval or to preparations of valerian. It is said to be useful in the various neuroses, especially those of the circulatory, digestive and central nervous systems.

Dosage.—From 0.25 to 0.75 Gm. (4 to 12 minims) from two to four times daily. It is best given after meals with some milk, coffee or similar drink to avoid eructations.

Manufactured by J. D. Riedel, Aktien Gesellschaft, Berlin, Germany (Riedel and Co., New York). No U. S. patent. U. S. trademarks Nos. 41,917 and 56,450.

New Bornyval Pearls.—Each capsule contains new bornyval, 4 minims.

New bornyval is prepared by heating equivalent amounts of borneol chloracetate with salts of valerianic acid and subsequent purification by distillation *in vacuo*.

New bornyval is a colorless, nearly tasteless and odorless, oily liquid, insoluble in water, readily soluble in alcohol, ether, benzene and fatty oils. The alcoholic solution is neutral to litmus. It has a specific gravity of from 1.025 to 1.030 and boils at 181 C. at 12 mm. pressure, and from 283 C. to 285 C., with decomposition, at 760 mm. pressure.

If about 6 Gm. new bornyval be saponified by boiling for one hour with from 50 to 100 Gm. of an alcoholic solution of potassium hydroxid (10 per cent.) under a reflux condenser, the alcohol distilled off, and the remainder distilled with steam, crystals will be formed in the condenser which, after recrystallization from petroleum ether, may be identified as borneol by their appearance, odor and melting-point. If the liquid from which the borneol was distilled be made acid and heated, the odor of isovalerianic acid will be apparent.

Therapeutics

SOME OVERLOOKED CAUSES OF CHRONIC ILLNESS

Misdirected treatment is unfortunate, for both the patient and the physician; the former loses time and comfort, if not health, and the latter loses the patient. Consequently, a brief reference to some of the conditions in which the etiologic factors are sometimes overlooked, and therefore the treatment wrongly directed may not be amiss.

LINGUAL TONSIL COUGH

A congested lingual tonsil as the cause of a troublesome, dry cough is frequently overlooked. This is a common condition, and may occur without bronchitis, tracheitis or laryngitis. It may also occur without a pharyngitis, although it is frequently associated with it. It is frequent in cigarette smokers, and more or less in all smokers, but often occurs in patients who do not smoke. If a person has had this trouble once he is likely to have it recur with every cold. It not infrequently happens that a patient is suspected of having incipient tuberculosis, just because he has a lingual tonsil cough, especially if the hard, rasping cough has produced a blood-tinged mucus. Such a cough is generally worse when the patient lies down, is precipitated by any change of temperature from the house to out-of-doors, or vice versa, from a warm room to a cold room, or the reverse. It is also precipitated by laughing. If the cough begins there is a shower of coughs, until the patient has literally scraped the part irritated, much as one scratches an itching spot until it almost bleeds. The cause of this cough is quite generally referred by the patient to a tickling well down under the sternum. The patient may not always have a cough from lingual tonsil irritation, but may complain of a burning sensation which he may term "heartburn."

The diagnosis of the condition is readily made by the use of the laryngoscope, when the lingual tonsil at the base of the tongue will be found, many times, red and inflamed, sometimes heavily coated, and at other times with large papillae projecting from the mucous membrane.

Emphasis should be laid on the fact that cough mixtures will not cure this cough. It is true that some gummy, gelatinous, sweetish, thick, syrupy preparations may so coat the lingual tonsil when they are swallowed as to ease the cough for a time; but what becomes of the poor stomach from such medication? Gargling may not reach this region; only patients who have been educated to do so can gargle to wash the lingual tonsil. Gargles should always be ordered, however; they will at least soothe the rest of the throat. Efficient gargles are the liquor antisepticus alkalinus of the National Formulary, which should be diluted with an equal part of hot or warm water; or a Seiler's tablet solution, one tablet dissolved in 2 or 3 ounces of warm water; or a simple and efficient gargle may be made by adding one-fourth of a teaspoonful of bicarbonate of soda and one-fourth of a teaspoonful of salt to half a glass of warm water. Another *useful gargle is the following:*

		Gm. or c.c.	
℞	Acidi borici.................	2	ʒ ss
	Potassii chloratis...........	5	ʒ i
	Aquae menthae piperitae....	200	fl℥ vi

M. Sig: Use as a gargle every 3 or 4 hours.

At times when the throat is flabby, a tannic acid gargle is of value, such as:

		Gm. or c.c.	
℞	Acidi tannici................	3	gr. xl
	Glycerini	10	flʒ ii
	Aquae gaultheriae q.s...	ad 200	fl℥ vi

M. Sig: Use as a gargle twice a day.

Of course, sedative cough mixtures containing codein or heroin are of benefit in reducing the irritation of the nerves of the throat, and ammonium chlorid will stimulate the mucus secretion and perhaps, sooner or later, also help the condition, but as above stated, such treatment seems unnecessary and is generally unsatisfactory in this kind of a cough. It is generally much better to give no medicine at all by the stomach. If the throat is dry, small doses of sodium iodid given three times a day will increase the mucus of the pharynx and lingual tonsil region and may aid in curing this cough.

The proper and only satisfactory treatment is by local applications. This irritated glandular tissue should be swabbed daily for a few times with boroglycerid, or less frequently with a solution of iodin such as:

		Gm. or c.c.	
℞	Iodi	1	gr. xv
	Potassii iodidi...............	3	gr. xlv
	Glycerini	30	fl.℥ i

M.

The patient should understand that if he wishes to recover quickly from his cough, daily visits to his physician will accomplish more in a week than will three months of intermittent treatment.

DISTURBANCES OF THE THYROID

The most familiar condition of hypersecretion is Graves' disease, and the condition that is so readily diagnosed as serious hyposecretion, namely, cretinism and myxedema, is also well understood; but disturbances which may be caused by a small amount of hypersecretion or hyposecretion of the thyroid, are not so readily recognized.

It should not be forgotten that this gland may hypersecrete or hyposecrete in all degrees, or the gland may have some portions of its secretion increased and others diminished. In this last condition the disturbance that it causes is very hard to overcome, as inhibiting the thyroid activity on the one hand, or feeding thyroid on the other, is not likely to effect a cure. Disturbances caused by too much or too little secretion and not by a mixed condition, however, may be greatly benefited by treatment.

About 90 per cent. of all cases of thyroid disturbance occur in women; therefore it is the condition of the gland in women that we are discussing.

The disturbances caused by an increased secretion are tachycardia or attacks of simple palpitation, nervous irritability, sleeplessness, increased perspiration, hot flashes, some digestive disturbances and a tendency to menstrual flooding. Some of the signs of hyposecretion which may not be recognized are certain forms of obesity, especially that form which, when fully developed, is typical of the picture of adiposis dolorosa; drowsiness and a tendency to sleep in the daytime, and more or less mental apathy and sluggishness; dry skin and perhaps chronic eczemas; slow pulse; often an increase in blood-pressure; various digestive disturbances, and amenorrhea or scanty menstruation before it is time for such a condition to occur.

The neurotic woman who is very active socially, good company and bright in reparteé, and who may be doing much of the good work of the world, who works on nerve and finally collapses, very generally has hypersecretion of the thyroid. It is this type that may not be hysterical as we understand major hysteria with stigmata, but such patients when they have pains have them in excess of all local cause. They eat very little, even for days, perhaps get little sleep and recuperate with difficulty after they once break down, and one breakdown is likely to be followed by others. If these patients can be made apathetic without being made melancholic, they will rapidly recover. Such patients should receive, in a modified form, the same kind of treatment that we advise in more developed Graves' disease.

It has lately been shown that some of the symptoms in Graves' disease may be due to the secretion from left-over fragments of the thymus gland. On the other hand, it should be remembered that some types of mental depression and some instances of epilepsy are due to subsecretion of the thyroid.

If it is presumed, from the symptoms, that the thyroid is subsecreting, it may be activated either by iodin or by the administration of thyroid. If the symptoms are inconclusive (that is, some symptoms showing increased thyroid secretion and some are apparent undersecretion) it will often be found that the feeding of thyroid will make the patient worse, but small doses of an iodid may aid the thyroid in recovering its efficiency. Disturbances of the menopause are due to the secretions of the thyroid, ovaries and probably corpus luteum not having become correlated to the changed condition of the woman.

ORTHOSTATIC ALBUMINURIA

Not too great reliance should be placed on the fact that a morning urine is perfectly clear of albumin. It is necessary, in a doubtful condition, that we should examine specimens of urine passed at different times during the day, unless we are careful to obtain the twenty-four-hour specimen, and even then the variations of the urine passed at different times will not be discovered. Sometimes a patient who has an albumin-free morning urine will show a large percentage of albumin in the urine at noon and in the evening.

(To be continued)

STATE BOARD STATISTICS FOR 1913

THE ANNUAL PRESENTATION BY THE COUNCIL ON MEDICAL EDUCATION OF RESULTS OF STATE BOARD EXAMINATIONS

On pages 1640 to 1649 are three tables, A, B and C, giving in detail the results of the various state medical license examinations held during 1913. These statistics are complete, since full reports were obtained from all state licensing boards.

Tables A and B have been arranged so that, read from left to right, they give the results by colleges, showing the number of graduates appearing for examination in each state, whether they passed or failed, the total number examined during the year, the number who passed, the number who failed, the percentage of failures and the number of states in which graduates of each school appeared for examination. Read from above downward, they give the results by states, showing the number registered and rejected from each college, the total number examined, the total number registered, the total number rejected and the percentage of rejections. The fact that the majority of graduates take the license examination in the state in which the college is located is shown by the dark diagonal zone made by the grouping of figures, passing from the upper left to the lower right corner of each table. This shows also that the states in which low-grade medical schools are permitted to exist are themselves the recipients of the greater portion of the ill-trained output of such schools. These tables are worthy of much careful study, for many important deductions are possible. The marginal numbers will enable the reader more readily to follow the lines for any colleges in which he is interested.

Caution in Forming Conclusions

In making comparisons on the basis of these statistics, several factors should be considered carefully. The number examined is important since, if all other conditions are equal, the larger the number of graduates examined the more accurate is the finding. But other conditions are seldom equal. The number of states in which a school's graduates have been examined is important. The larger this number the more accurate will be the conclusions. Again, the character of the board making the examination and the methods employed are important factors to be considered, since some boards hold very careful examinations and include practical laboratory and clinical tests, or they may mark the papers more severely, while others, especially partisan boards, may be very lenient. In this connection it should be stated that although conditions are undergoing a steady improvement, it is still true that the character of the license examination as usually conducted, is such that graduates of colleges conducted largely by quiz-class methods may easily be successful in passing them. It is particularly important in forming conclusions based on these statistics to note for each college the states in which its graduates *are not admitted to examinations*—information set forth for the first time with these statistics, in Table D.

Graduates of All Years Examined in 1913

Table A shows the results for all candidates who took examinations in 1913 regardless of the years in which they graduated. This shows that altogether 6,435 were examined last year, as compared with 6,879 in 1912; 6,960 in 1911; 7,004 in 1910, and 7,287 in 1909. Of those examined, 18.6 per cent. failed, as compared with 20.5 per cent. in 1912; 19.9 per cent. in 1911; 18.4 per cent. in 1910, and 19.6 per cent. in 1909. During the years 1905 to 1908 the percentage of failures each year was over 20 per cent. The rather lower percentage in recent years is doubtless due to two causes: (1) wider extension of reciprocity and (2) the fact that graduates of low-grade medical colleges are now not admitted to examinations in about thirty states (see Table D). Graduates of low-grade colleges therefore who are usually responsible for high-failure percentages are found to take their examinations in the more lenient states and as a consequence, fewer failures result.

There were 99 medical colleges in the United States granting degrees in 1913, which had graduates examined, as compared with 110 in 1912, and with 153 in 1905. Foreign graduates were examined in twenty-four states, the total number being eighty-nine; and of this number forty-two, or 47.2 per cent. failed. The largest number of foreigners examined in any state was twenty in New York. Graduates of Canadian schools were examined in nineteen states, more appearing, naturally, in the border-line states. The figures for the Canadian colleges are given separately in order to show the number of candidates coming from each as well as to show the successes of their graduates at the examinations. Altogether 58 candidates from Canadian colleges were examined, of which number 17, or 29.3 per cent., failed. Of all Canadian colleges, the McGill University had the largest number examined. The highest percentages of failures were for Laval University, 63.3, Queen's University, 40 and the University of Toronto, 20.

Undergraduates Examined During 1913

Line 107 of Table A shows the number of non-graduates examined in seven states during 1913. Altogether 251 non-graduates were examined, of which number 95, or 37.8 per cent., failed, as compared with 35 per cent. in 1912, 38.5 per cent. in 1911 and 45.6 per cent. in 1910. Such candidates were examined during 1913 in Colorado, Florida, Maryland, Massachusetts, Oregon, Tennessee and Texas. Of such candidates 1 was licensed in Colorado, 15 in Oregon, 19 in Massachusetts and 121 in Tennessee. In Tennessee in the last four years 1,187 candidates were registered by examination, and of these 515, or 43.4 per cent., were non-graduates. Meanwhile, Tennessee is now the only Southern state which has the door wide open for non-graduates and is the only state in the country which registers any considerable number of such candidates.

Recent Graduates Examined During 1913

Table B gives the results for graduates of 1909 to 1913 inclusive who were examined during 1913. This table is particularly important since it deals with recent graduates and is, therefore, the fairest basis for comparison between colleges. Such comparisons are worthless, however, unless reference is also made to Table D, showing in what states candidates are reported not eligible for examination. Of all candidates examined in 1913, 5,390, or 83.8 per cent., were recent graduates, and of this number 16.5 per cent. failed, as compared with 18.6 per cent. for all candidates. The figures for several medical schools which have ceased to exist either through merger or otherwise have been included in the line for miscellaneous colleges.

Old Practitioners Examined During 1913

Table C is so arranged as to show in comparison the results of all years (first column), for recent graduates (second column), the graduates of 1908 and previous year (third column), and the graduates of 1913 (fourth column). Of the graduates of 1908 and previous years—of "old practitioners"—794 were examined, and of this number 223, or 28.1 per cent., failed as compared with 16.5 per cent. of failures for recent graduates. This high percentage of failures is probably due chiefly to the long time these candidates have been out of college and to the fact that they are required to take the same examination as recent graduates.

CONTINUED ON PAGE 1652

Marginal Number	NAME OF COLLEGE	1 Alabama		2 Arizona		3 Arkansas		4 California		5 Colorado		6 Connecticut		7 Delaware		8 District of Columbia		9 Florida		10 Georgia		11 Idaho		12 Illinois		13 Indiana		14 Iowa		15 Kansas		16 Kentucky		17 Louisiana		18 Maine		19 Maryland		20 Massachusetts		21 Michigan		Marginal Number
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	
	ALABAMA																																											
1	Birmingham Medical College	25	19															1	0	1	0													1	0									1
2	University of Alabama, School of Medicine	22	5			1	0											10	0	1	0													1	0									2
	ARKANSAS																																											
3	University of Arkansas, Medical Dept.					22	9																							1	0			0	1									3
	CALIFORNIA																																											
4	California Eclectic Medical College.—E.							2	4																																			4
5	College of Phys. and Surgs., Los Angeles			1	0			20	1																																			5
6	Hahnemann Medical College of the Pacific.—H.							12	1									0	1																									6
7	Leland Stanford Junior Univ., Dept. of Med.							7	0																																			7
8	Oakland College of Medicine and Surgery							4	0																																			8
9	College of Phys. and Surgs., San Francisco							4	3																															0	1			9
10	University of California, Medical Dept.							13	0																																			10
	COLORADO																																											
11	University of Colorado, School of Medicine			1	0			6	0	44	0															2	0																	11
	CONNECTICUT																																											
12	Yale University, Medical Dept.											16	1																											1	0			12
	DISTRICT OF COLUMBIA																																											
13	George Washington University, Dept. of Med.															12	0			1	0			3	0													6	0	4	0			13
14	Georgetown University School of Medicine											3	2	1	0	11	0	2	0					1	0															1	0			14
15	Howard University School of Medicine	1	1									0	1			9	0	1	0											3	0	2	0											15
	GEORGIA																																											
16	Atlanta College of Physicians and Surgeons	3	6															11	3	83	0													1	2									16
17	Atlanta School of Medicine	1	5															7	2	32	1													1	0									17
8	Georgia College of Eclectic Med. and Surg.—E.	0	1			1	0																																					18
	Southern College of Medicine and Surgery	0	2															0	7	2	9																							19
	niversity of Georgia, Medical Dept.																	4	3	25	1																			1	1			20
	ILLINOIS																																											
	ennett Medical College			1	0			1	0							2	0	1	0			1	0	58	10	1	0	1	1			0	1	1	0					1	0	2	0	21
	Chicago College of Medicine and Surgery	4	2			1	0	1	1									2	0			1	0	151	29	7	0	9	0	5	0	1	0	1	0					1	2	4	0	22
	Hahnemann Medical College and Hospital.—H.							1	2	1	0	2	0			1	0							24	5	3	0	3	0	1	0	1	0			1	0							23
4	Jenner Medical College																					0	1	10	6																			24
25	Northwestern																					1	0	56	1	2	0	8	0															25
26	University of																							122	8	4	0	7	0	1	0											2	0	26
27	Rush Medical																					1	0	76	0	3	0	8	0	3	0													27
	INDIANA																																											
28	Indiana University School of Medicine			1	0																					48	0																	28
	IOWA																																											
29	State Univ. of Iowa College of Medicine							1	0									1	0					2	0			17	0											1	0			29
30	State Univ. of Iowa Coll. of Homeo. Med.—H.																											7	0															30
	KANSAS																																											
31	University of Kansas School of Medicine	1	0	1	0																									8	0													31
	KENTUCKY																																											
32	University of Louisville, Medical Dept.			1	0							0	4					3	1	4	1			0	1	17	1	1	0	1	0	48	4	3	0									32
	LOUISIANA																																											
33	Tulane University, School of Medicine	7	2	0	1													4	0	1	0											1	0	50	1									33
	MAINE																																											
34	Medical School of Maine			1	0			1	1									1	0	1	0															10	1			7	3			34
	MARYLAND																																											
35	Eastern University School of Med., Baltimore.—E																																							0	1			35
36	Johns Hopkins University, Medical Dept.							4	0			3	0	1	0	2	0			3	0	1	0	1	0							4	6					30	1	2	0			36
37	College of Physicians and Surgeons, Baltimore			1	0							6	5					3	0			1	0															7	4	5	0			37
38	University of Maryland School of Medicine	1	1					1	1			1	4			2	0	1	0	2	0																	27	9	1	0	1	0	38
	MASSACHUSETTS																																											
39	Boston University School of Medicine.—H.											1	0			1	0																			2	0			9	1	3	0	39
40	College of Physicians and Surgeons, Boston											0	1			1	1	1	0																	3	5	0	1	2	7			40
41	Harvard Medical School			1	0			1	0	1	0	2	0					1	0					2	0	1	0	1	0							12	0			38	1	1	0	41
42	Tufts College Medical School											2	2					0	2					1	0			1	0							7	0	1	0	69	9			42
	MICHIGAN																																											
	Detroit College of Medicine and Surgery							1	0									1	0																							27	0	43
44	Univ. of Michigan, Dept. of Med. and Surg.							2	0	1	0	0	1					2	0			2	0	1	0															1	0	34	0	44
45	Univ. of Michigan, Homeopathic College.—H.																																									13	0	45
	MINNESOTA																																											
46	University of Minnesota, Medical School							2	0																																			46
	MISSOURI																																											
47	American Medical College					2	0	0	3									0	3					4	7	1	0	1	0	0	1	1	0											47
48	Eclectic Medical University.—E.					11	2			0	1																																	48
49	Ensworth Medical College			0	1																	0	1					5	0	1	1													49
50	Kansas City Hahnemann Medical College.—H.									1	0																			5	0													50
51	St. Louis University School of Medicine			2	0	1	0	1	0									3	0			1	0	7	0			3	0	3	0													51
52	St. Louis College of Physicians and Surgeons							1	0									0	2			1	0	1	4			1	2			1	0											52
53	Washington University, Medical School			3	0	1	0	1	0													1	0	6	0																			53
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		

H—Homeopathic; E—Eclectic.

Marginal Number	22		23		24		25		26		27		28	
	Minnesota		Mississippi		Missouri		Montana		Nebraska		Nevada		New Hampshire	
	P	F	P	F	P	F	P	F	P	F	P	F	P	F
1			0	1										
2			4	1					1	0				
3					1	1								
4											1	1		
5														
6											1	0		
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11							1	0						
12														
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14							0	1						
15					1	0								
16			2	0										
17			3	0										
18														
19														
20														
21					2	0	2	1	4	0				
22			2	0	2	0	1	0	5	0				
23					2	0	2	0	4	0				
24														
25	3													
26	1													
27	3													
28														
29							1	0						
30														
31														
32	1	0	1	0			0	1						
33			12	1	3	0								
34													4	0
35														
36					5	0	1	0						
37							1	0			1	0		
38														
39													3	0
40														
41	2	0			3	0	1	0					1	0
42													1	0
43							1	0						
44							1	0						
45							1	0						
46	50	0					1	0						
47	1	0			30	8			1	0				
48							0	1						
49					2	1			2	0				
50					1	0			1	0				
51	1	0			54	0	2	1						
52			1	0	7	8								
53					30	0	1	0						
	22		23		24		25		26		27		28	

Marginal Number	29		30		31		32		33		34		35	
	New Jersey		New Mexico		New York		North Carolina		North Dakota		Ohio		Oklahoma	
	P	F	P	F	P	F	P	F	P	F	P	F	P	F
1													2	0
2														
3													4	0
4														
5													1	0
6														
7														
8														
9														
10														
11														
12					0	1					1	0		
13					2	1	1	0						
14	1	0			2	2								
15	3	0					2	1			3	0		
16														
17														
18														
19														
20														
21					1	0							2	0
22			1	0	3	5	1	0	0	1			3	0
23					0	1								
24														
25														
26														
27									1	0			3	0
28														
29					1	0								
30														
31														
32	2	0			2	0					1	1		
33	1	0			1	0							3	0
34														
35														
36					18	5	2	0			4	0		
37	1	1			2	4	0	1						
38	1	1			3	1	7	2						
39														
40							1	0						
41	2	0			6	3					1	0		
42					2	2								
43											1	0		
44					2	0					2	0	1	0
45					1	2								
46					1	0			2	1				
47			1	0									3	1
48														
49			1	0										
50													1	0
51					1	0					1	0	1	0
52			0	1									1	0
53														
	29		30		31		32		33		34		35	

Marginal Number	36		37		38		39		40		41		42	
	Oregon		Pennsylvania		Rhode Island		South Carolina		South Dakota		Tennessee		Texas	
	P	F	P	F	P	F	P	F	P	F	P	F	P	F
1													1	0
2							1	0			1	0	1	0
3											2	0		
4														
5			0	1										
6														
7														
8														
9	0	2												
10	0	1												
11	3	0							2	0			1	0
12														
13	1	0											1	0
14	1	0	4	2										
15			1	0	1	0	3	0			1	0	1	0
16	1	0					7	3			3	0	2	0
17							3	1						
18							0	1					0	1
19							0	3			0	3		
20							4	3						
21	1	0							2	0	1	1		
22			2	3			1	1	2	0	1	0	2	0
23	1	1												
24														
25														
26														
27	4	0	1	0					5	0				
28							0	1						
29														
30														
31														
32	2	1	3	4			1	1			4	0	7	1
33													12	0
34	1	0												
35														
36	8	0	4	0			2	0			1	0	1	0
37			6	1	1	0	1	0			1	0		
38	1	0	5	1	2	0	6	2						
39			1	0			2	0						
40							2							
41	3	0	0	2	5	1								
42	1	0			5	1								
43	1	0												
44	5	0					1	0	1	0				
45														
46														
47	3	1	0	1					1	1	11	2	1	0
48														
49									1	0				
50													1	0
51	0	1												
52			1	0							1	0		
53	1	0												
	36		37		38		39		40		41		42	

Marginal Number	43		44		45		46		47		48		49		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Ex. in	Marginal Number
	Utah		Vermont		Virginia		Washington		West Virginia		Wisconsin		Wyoming							
	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
1															51	31	20	39.2	7	1
2															49	43	6	12.2	10	2
3															41	30	11	26.9	6	3
4															8	3	5	62.5	2	4
5															24	22	2	8.3	4	5
6															15	13	2	13.3	3	6
7															7	7	0	0.	1	7
8															4	4	0	0.	1	8
9															10	4	6	60.0	3	9
10															14	13	1	7.2	2	10
11	1	0					2	0			1	0			64	64	0	0.	11	11
12															29	27	2	6.9	4	12
13			1	0	2	0					1	0			37	35	2	5.4	13	13
14							1	0							35	28	7	20.0	12	14
15					1	0			2	0					38	35	3	7.9	17	15
16					0	1									128	113	15	11.7	10	16
17															59	48	11	18.6	7	17
18															4	1	3	75.0	4	18
19															26	2	24	92.3	5	19
20															42	34	8	19.0	4	20
21							2	0	1	0	2	0			104	90	14	13.5	23	21
22	0	1					1	0	1	0	3	1	1	0	266	220	46	17.3	30	22
23	1	0									2	0			59	50	9	15.3	17	23
24															17	10	7	41.2	2	24
25															116	112	4	3.4	20	25
26															199	186	13	6.5	23	26
27	5	0					1	1			5	0			153	151	2	1.3	24	27
28							0	1			1	0			52	50	2	3.8	5	28
29							1	1							26	25	1	3.8	8	29
30															7	7	0	0.	1	30
31															10	10	0	0.	3	31
32	1	0			1	1	1	1	8	3			1	0	140	114	26	21.4	26	32
33							1	0							101	96	5	4.9	13	33
34															31	26	5	16.1	8	34
35															1	0	1	100.0	1	35
36	1	0			4	0	1	0							104	98	6	5.8	23	36
37	6	0					0	1	12	1	1	0			74	56	18	24.3	19	37
38					2	0			2	0					88	66	22	25.0	18	38
39															23	22	1	4.4	8	39
40															25	10	15	60.0	8	40
41															94	87	7	7.4	23	41
42															109	92	17	15.6	13	42
43							1	0					1	0	34	34	0	0.	8	43
44							4	1							62	60	2	3.2	16	44
45							1	0							18	16	2	10.5	4	45
46							5	0							62	61	1	1.6	6	46
47							0	1							90	61	29	32.2	19	47
48															15	11	4	26.7	3	48
49													0	1	17	12	5	29.4	9	49
50															10	10	0	0.	6	50
51	1	0					0	1							85	82	3	3.5	17	51
52							0	1							34	16	18	52.9	13	52
53	1	0													45	45	0	0.	9	53
	43		44		45		46		47		48		49							

TABLE A—PHYSICIANS EXAMINED BY

Marginal Number	NAME OF COLLEGE	1 Alabama		2 Arizona		3 Arkansas		4 California		5 Colorado		6 Connecticut		7 Delaware		8 District of Columbia		9 Florida		10 Georgia		11 Idaho		12 Illinois		13 Indiana		14 Iowa		15 Kansas		16 Kentucky		17 Louisiana		18 Maine		19 Maryland		20 Massachusetts		21 Michigan		Marginal Number
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	
	NEBRASKA																																										
54	John A. Creighton Medical College			0	1			1	0													2	0							1	0													54
55	Cotner Medical College.—E							1	0									0	1																									55
56	University of Nebraska, College of Medicine									0	1																																	56
	NEW HAMPSHIRE																																										
57	Dartmouth Medical School											1	0																											8	1			57
	NEW YORK																																										
58	Albany Medical College													1	0									1	0	1	0													1	0			58
59	Columbia University, Coll. of Phys. and Surgs.	1	0					1	0			4	1			1	0	1	0	1	0			1	0	1	0	1	0	1	0					2	0			1	1			59
60	Cornell University Medical College							2	0									1	0																					1	0			60
61	Fordham University, School of Medicine											2																																	61
62	Long Island College Hospital							1	0			2																																	62
63	New York Homeopathic Med. Coll. and Hosp.—H											5																																	63
64	New York Med. Coll. and Hosp. for Women.—H.							1	0																															1	0			64
65	Syracuse University College of Medicine							1	0															1	0					1	0					1	0					1	1	65
66	University and Bellevue Hospital Medical Coll.											5	0					1	0													1	0							2	0			66
67	University of Buffalo, Medical Dept.							1	0									0	1																					1	0	1	0	67
	NORTH CAROLINA																																										
63	Leonard Medical School	0	1															0	1	1	0																							68
69	North Carolina Medical College																	1	0	1	0																							69
	OHIO																																										
70	Cleveland-Pulte Medical College.—H																																											70
71	Eclectic Medical College.—E					7	0	0	2									1	0							2	0											0	1					71
72	Ohio-Miami Medical College	1	0					1	0																							1	0											72
73	Starling-Ohio Medical College																																											73
74	Toledo Medical College																																											74
75	Western Reserve University, School of Medicine																	1	0																					1	0			75
	OKLAHOMA																																										
76	University of Oklahoma, School of Medicine																																											76
	OREGON																																										
77	University of Oregon, Medical Dept.																					1	0																					77
	PENNSYLVANIA																																										
78	Hahnemann Medical College and Hospital.—H											1	0													1	0													1	0			78
79	Jefferson Medical College	2	0			2	0	3	0			6	0	5	0			2	0					2	0			3	0			2	0	1	0	1	0	6	1	2	0	1	0	79
80	Medico-Chirurgical											1	0			1	0					1	0															2	0					80
81	Temple University, ''															1	0																					1	1					81
82	University of Pennsylvania, School of Medicine	2	0	1	0			4	0					1	0	2	0			1	0			2	0	3	0	2	0									3	0	3	0			82
83	University of Pittsburgh, Medical Dept.							1	1					1	0																											1	0	83
84	Woman's Medical College of Pennsylvania									1	0	1	0			2	0																					5	0	4	1			84
	SOUTH CAROLINA																																										
85	Medical College of South Carolina																	1	1	1	0			1	0																			85
	TENNESSEE																																										
86	Lincoln Memorial University, Medical Dept.			0	1			0	1																							2	1											86
87	Meharry Medical College	2	0			4	8											3	3	7	9			4	8					6	2	2	2	0	1			0	3					87
88	University of Tennessee, College of Medicine	0	3			7	1																	1	0					0	1			2	4									88
89	University of West Tennessee, Medical Dept.																	1	1																									89
90	Vanderbilt University, Medical Dept.	4	0			1	0	4	0							1	0	7	1			2	0	1	0			1	0			5	0	1	0									90
	TEXAS																																										
91	Baylor University College of Medicine																							1	0																			91
92	Texas Christian University, School of Medicine																																	1	0									92
93	Southern Methodist University, Medical Dept.																																											93
94	University of Texas, Dept. of Medicine																							1	0																			94
	VERMONT																																										
95	University of Vermont College of Medicine							1	0			8	8																											11	3			95
	VIRGINIA																																										
96	Medical College of Virginia																	1	0					0	1													2	1	2	0			96
97	University of Virginia, Dept. of Medicine	1	0	1	0	1	0									1	0	4	0																							1	0	97
98	University College of Medicine, Richmond	1	1											1	0																													98
	WISCONSIN																																										
99	Marquette University, Medical Dept.																							1	0															1	0			99
	CANADIAN																																										
100	Laval University, Medical Faculty																	0	1																	1	1			1	0			100
101	McGill University, Medical Faculty											1	0																							1	0	1	0	1	0	1	0	101
102	Queen's University, Faculty of Medicine																																							1	0			102
103	University of Manitoba, Manitoba Med. Coll.																																											103
104	University of Toronto, Medical Faculty																	1	0																							2	1	104
105	Foreign Colleges			2	0			2	3	0	1			1	1			2	1					2	3									1	0			3	1	5	4	3	0	105
106	Miscellaneous Medical Colleges	9	8	3	4	23	8	26	11	3	2	3	19			2	4	22	13	3	3	4	0	22	16	3	0	27	1	47	2	6	4	4	11	5	2	14	15	2	7	1	1	106
107	Undergraduates									1	0							0	1																			0	2	19	29			107
	Totals by States	147		35		119		199		58		128		13		60		165		195		23		665		102		111		96		90		89		55		148		289		102		
	Totals—Examined—Passed	90		26		91		163		53		77		12		55		116		171		21		567		101		107		89		78		69		46		108		215		99		
	Totals—Examined—Failed	57		9		28		36		5		51		1		5		49		24		2		98		1		4		7		12		20		9		40		74		3		
	Percentage of Failures	38.8		25.7		23.5		18.1		8.6		39.8		7.7		8.3		29.7		12.3		8.7		14.7		1.0		3.6		7.3		13.3		22.5		16.4		27.0		25.6		2.9		
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		

H—Homeopathic; E—Eclectic.

Marginal Number	22 Minnesota		23 Mississippi		24 Missouri		25 Montana		26 Nebraska		27 Nevada		28 New Hampshire		29 New Jersey		30 New Mexico		31 New York	
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F
54					1	0	5	1	37	2										
55									7	0										
56									10	0										
57							1	0					3	1	1	0			2	0
58							1	0											41	21
59			2	0	4	0					1	0			1	0			88	13
60															1	0			20	1
61															2	0			16	8
62															4	0			78	29
63							1	0			1	0			8	1			18	19
64																			6	2
65																			25	0
66															9	2			63	5
67											1	0	1	0					35	13
68																				
69																				
70																				
71					1	0					1	0					1	0		
72											1	0							0	1
73											1	0								
74																				
75																			1	0
76																				
77																				
78							1	0							3	0			1	2
79	1	0	2	0	1	0	3	0	1	0					10	0			2	4
80															1	0			4	3
81	1	0																		
82									1	0					10	0			10	5
83																			0	1
84															1	0			4	3
85																				
86																				
87	0	1	1	2	1	2			1	0										
88			4	3											1	0				
89																				
90			6	0	2	0	1	0											0	1
91																				
92																	1	0		
93																				
94					1	0														
95													1	1					3	4
96															1	0			3	0
97			1	0											1	0			5	2
98															2	0			1	0
99	0	1			2	0	2	1												
100	0	1					1	0											0	1
101	1	0																	7	[illegible]
102	1	0																	2	
103																				
104	1	0					2	0			1	0							1	
105	4	1	1	0	1	0									1	2			4	16
106			19	11	35	5	8	7	8	0	0	2	3	1	1	0	1	0	12	11
107																				
	75		80		225		73		89		13		20		76		7		716	
	71		61		200		57		87		10		17		69		6		511	
	4		19		25		16		2		3		3		7		1		205	
	5.3		23.7		11.1		21.9		2.2		23.1		15.0		9.2		14.3		28.6	
	22		23		24		25		26		27		28		29		30		31	

Marginal Number	32 North Carolina		33 North Dakota		34 Ohio		35 Oklahoma		36 Oregon		37 Pennsylvania		38 Rhode Island		39 South Carolina		40 South Dakota		41 Tennessee	
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F
54									2	0							2	0		
55									1	0										
56																	1	0		
57																				
58															1	0				
59	3	0							1	0	4	0	3	0	1	0			1	0
60													2	0						
61																				
62																				
63											1	0	1	1						
64					1	0														
65													1	0						
66											1	0	1	0						
67									1	0	1	0								
68	6	12									0	2			7	7			3	0
69	23	7													3	3			1	0
70					21	1			2	0	1	1								
71					14	0	1	0	1	0	2	0							1	0
72					27	0														
73					52	1														
74					15	0														
75					27	0	1	0												
76							9	0												
77									12	2										
78									1	0	27	2								
79	6	0	2	0			2	0	4	1	54	7	1	0	2	1				
80	0	[illegible]									[illegible]	4			1	0				
81	0											3					1	0		
82	6											2	1	0	1	0			2	0
83											50	1								
84									1	1	15	1			2	0				
85	0	1													37	7				
86															2	0			3	8
87	0	1					1	1							2	3			55	3
88	0	2					1	0											21	1
89															0	2			5	7
90	2	0					1	0							1	1			26	2
91							1	0												
92							2	0												
93																				
94	1	0							0	1										
95													2	0						
96	4	2									2	0								
97	3	0							1	0					2	0				
98	8	1																		
99			0	2			1	0												
100			0	2									1	1						
101																				
102																				
103																				
104																				
105					2	0			1	0	2	6							1	0
106	1	2	4	3	14	0	10	3	23	13	20	10			3	7	3	0	39	10
107									15	11									121	51
	111		29		192		63		148		404		32		146		31		400	
	77		16		189		58		112		345		28		99		30		306	
	34		13		3		5		36		59		4		47		1		94	
	30.6		44.8		1.6		7.9		24.3		14.6		12.5		32.2		3.2		23.5	
	32		33		34		35		36		37		38		39		40		41	

Marginal Number	42 Texas		43 Utah		44 Vermont		45 Virginia		46 Washington		47 West Virginia		48 Wisconsin		49 Wyoming		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Ex. in	Marginal Number
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
54			1	0									1	0			57	53	4	7.0	11	54
55															1	0	11	10	1	9.1	5	55
56									1	0							13	12	1	7.7	4	56
57																	18	16	2	11.1	6	57
58					1	0											69	48	21	30.4	8	58
59	1	0			1	1			4	0							147	131	16	10.9	27	59
60									1	0							29	28	1	3.4	7	60
61																	28	19	9	32.1	3	61
62							1	0									118	88	30	25.4	7	62
63																	60	39	21	35.0	10	63
64																	11	9	2	18.2	4	64
65									0	1							39	31	8	20.6	9	65
66	1	0							1	0							92	85	7	7.6	10	66
67									1	1							58	43	15	25.9	10	67
68	1	0					1	1			6	4					53	25	28	51.9	9	68
69							2	0			1	0					42	32	10	23.8	7	69
70											1	0					27	25	2	7.5	4	70
71									0	1	2	2					40	34	6	15.0	15	71
72											1	0					31	30	1	3.2	7	72
73																	54	53	1	1.9	2	73
74																	15	15	0	0.	1	74
75																	31	31	0	0.	5	75
76																	9	9	0	0.	1	76
77									8	0							23	21	2	8.7	3	77
78													1	0			41	37	4	9.8	9	78
79	1	0	1	0			1	0	8	0							154	140	14	9.1	32	79
80													2	0			69	61	8	11.6	10	80
81																	25	20	5	20.0	6	81
82	4	0					1	0					1	0			146	139	7	4.8	25	82
83									0	1	2	0					62	55	7	11.3	7	83
84							1	0									43	37	6	14.0	11	84
85																	49	40	9	4.9	4	85
86							0	1			1	0					20	8	12	60.0	7	86
87	13	5					0	1			0	1					158	102	56	35.4	20	87
88	1	1					1	0									55	39	16	29.1	12	88
89																	16	6	10	62.5	3	89
90	9	0															80	75	5	6.2	19	90
91	19	1															22	21	1	4.5	3	91
92	14	1															19	18	1	5.3	4	92
93	14	0															14	14	0	0.	1	93
94	36	0															40	39	1	2.5	5	94
95					19	0											61	45	16	26.2	7	95
96	1	0					25	12			4	0					61	45	16	26.2	11	96
97							4	0	1	0							29	27	2	6.9	14	97
98	1	0					32	2			3	1					54	49	5	9.3	8	98
99													70	8	1	0	90	78	12	13.3	9	99
100																	11	4	7	63.6	8	100
101																	15	14	1	6.7	8	101
102																	15	9	6	40.0	8	102
103																	2	2	0	0.	2	103
104																	15	12	3	20.0	10	104
105	5	0			1	1	2	0	1	1	0	1					89	47	42	47.2	24	105
106	13	0					5	0	4	7	8	4			3	0	698	466	232	33.2	43	106
107	0	1															251	156	95	37.8	7	107
	179		27		26		106		85		75		106		11		6435					
	168		24		24		87		63		58		98		10		....	5236				
	11		3		2		19		22		17		8		1		....	....	1199			
	6.2		11.1		7.7		17.9		25.9		22.7		7.5		9.1		....	....	....	18.6		
	42		43		44		45		46		47		48		49							

TABLE B—GRADUATES OF 1909 TO 1913, INCLUSIVE,

Marginal Number	NAME OF COLLEGE	1 Alabama		2 Arizona		3 Arkansas		4 California		5 Colorado		6 Connecticut		7 Delaware		8 District of Columbia		9 Florida		10 Georgia		11 Idaho		12 Illinois		13 Indiana		14 Iowa		15 Kansas		16 Kentucky		17 Louisiana		18 Maine		19 Maryland		20 Massachusetts		21 Michigan		Marginal Number
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	
	ALABAMA																																											
1	Birmingham Medical College	24	17															1	0	1	0													1	0									1
2	University of Alabama, School of Medicine	22	5			1	0											8	0	1	0													1	0									2
	ARKANSAS																																											
3	University of Arkansas, Medical Dept.					22	9																							1	0			0	1									3
	CALIFORNIA																																											
4	California Eclectic Medical College.—E							2	4																																			4
5	College of Phys. and Surgs, Los Angeles			1	0			20	1																																			5
6	Hahnemann Medical College of the Pacific.—H							12	1																																			6
7	Leland Stanford Junior Univ., Dept. of Med.							7	0																																			7
8	Oakland College of Medicine and Surgery							4	0																																			8
9	College of Phys. and Surgs., San Francisco							4	3																																			9
10	University of California, Medical Dept.							10	0																																			10
	COLORADO																																											
11	University of Colorado, School of Medicine			1	0			5	0	44	0															2	0																	11
	CONNECTICUT																																											
12	Yale University, Medical Dept.											14	1																											1	0			12
	DISTRICT OF COLUMBIA																																											
13	George Washington University, Dept. of Med.															12	0			1	0			2	0													5	0	2	0			13
14	Georgetown University School of Medicine											3	2	1	0	10	0	1	0					1	0															1	0			14
15	Howard University School of Medicine	1	0									0	1			9	0	1	0											3	0	2	0											15
	GEORGIA																																											
16	Atlanta College of Physicians and Surgeons	3	6															10	2	83	0													1	2									16
17	Atlanta School of " "	1	4															7	2	32	1													1	0					1	2			17
18	Georgia College of "	0	1			1	0																																					18
19	Southern College o "	0	2															0	7	2	9																							19
20	University of Georgia, Medical Dept.																	3	3	25	1																			1	1			20
	ILLINOIS																																											
21	Bennett Medical College			1	0											2	0							58	10	1	0	1	1			0	1	1	0					1	0	2	0	21
22	Chicago College of Medicine and Surgery	4	2			1	0	1	1									2	0			1	0	151	29	6	0	9	0	5	0	1	0	1	0					1	2	4	0	22
23	Hahnemann Medical College and Hospital.—H									1	0	2	0											24	5	3	0	2	0	1	0	1	0			1	0							23
24	Jenner Medical College																							10	6																			24
25	Northwestern University Medical School					1	0	3	0															54	1	2	0	7	0															25
26	University of Illinois College of Medicine			1	0			3	1															122	8	3	0	6	0	1	0											2	0	26
27	Rush Medical College			2	0			2	0			1	0											74	0	2	0	6	0	3	0													27
	INDIANA																																											
28	Indiana University School of Medicine			1	0																					48	0																	28
	IOWA																																											
29	State Univ. of Iowa College of Medicine																							1	0			17	0											1	0			29
30	State Univ. of Iowa Coll. of Homeo. Med.—H																											7	0															30
	KANSAS																																											
31	University of Kansas School of Medicine			1	0																									8	0													31
	KENTUCKY																																											
32	University of Louisville, Medical Dept.			1	0							0	4					2	0	4	1					17	1	1	0	1	0	48	4	3	0									32
	LOUISIANA																																											
33	Tulane University, School of Medicine	7	2															4	0	1	0											1	0	40	0									33
	MAINE																																											
34	Medical School of Maine																																			10	1			2	2			34
	MARYLAND																																											
35	Eastern Univ., School of Med., Baltimore.—E																																							0	1			35
36	Johns Hopkins University, Medical Dept.							3	0			3	0	1	0	2	0			3	0	1	0	1	0							4	0					28	1	2	0			36
37	College of Physicians and Surgeons, Baltimore											6	5					1	0			1	0															7	4	4	0			37
38	University of Maryland School of Medicine	1	1					1	0			1	4			2	0	1	0	2	0																	27	9			1	0	38
	MASSACHUSETTS																																											
39	Boston University School of Medicine.—H																																			2	0			8	1	1	0	39
40	College of Physicians and Surgeons, Boston															1	1	1																			5	0	1	2	7			40
41	Harvard Medical School							1	0	1	0	2	0																								0			34	1	1	0	41
42	Tufts College Medical School											2	2					0																			0	1	0	69	9			42
	MICHIGAN																																											
43	Detroit College of Medicine and Surgery																																									27	0	43
44	Univ. of Michigan, Dept. of Med. and Surg.							1	0	1	0	0	1											1	0																	32	0	44
45	Univ. of Michigan, Homeopathic College.—H																																									13	0	45
	MINNESOTA																																											
46	University of Minnesota, Medical School							1	0																																			46
	MISSOURI																																											
47	American Medical College							0	1									0	2					1	3	1	0			0	1	1	0											47
48	Eclectic Medical University.—E					10	2			0	1																																	48
49	Ensworth Medical																													1	1													49
50	Kansas City Hahne																													5	0													50
51	St. Louis Universit																													3	0													51
52	St. Louis College of Physicians and Surgeons																							0	2			1	1			1	0											52
53	Washington University, Medical School			2	0	1	0																	4	0																			53
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		

H—Homeopathic; E—Eclectic.

Marginal Number	22 Minnesota		23 Mississippi		24 Missouri		25 Montana		26 Nebraska		27 Nevada		28 New Hampshire		29 New Jersey		30 New Mexico		31 New York		32 North Carolina		33 North Dakota		34 Ohio		35 Oklahoma	
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	0
2	...	...	3	1	...	...	...	...	1	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	0
4	...	...	...	...	...	...	...	...	...	...	1	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	0
6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	1	...	...	...	...	1	0	...	...
13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	1	1	0	...	...	...	...	...	...
14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	0	...	...	2	2	...	...	...	...	...	...	...	...
15	...	...	...	...	1	0	...	...	...	...	...	...	...	...	3	0	...	...	...	...	2	1	...	...	3	0	...	...
16	...	...	2	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
17	...	...	3	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
19	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
21	...	...	...	...	2	0	2	1	4	0	...	...	...	...	...	...	...	...	1	0	...	...	...	...	...	...	2	0
22	...	...	2	0	2	0	1	0	5	0	...	...	...	...	...	...	1	0	3	5	1	0	0	1	...	...	3	0
23	...	...	...	...	1	0	...	...	4	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
24	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
25	3	0	...	...	1	0	3	0	1	0	...	...	...	...	...	...	...	...	...	...	...	...	2	1	...	...	1	0
26	1	0	...	...	2	0	1	1	...	...	...	...	...	...	...	...	...	...	1	0	...	...	2	1	...	...	2	0
27	3	0	...	...	4	0	2	0	2	0	...	...	...	...	...	...	...	...	2	1	...	...	1	0	...	...	1	0
28	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
29	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
31	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
32	1	0	1	0	...	...	...	...	...	...	...	...	...	...	2	0	...	...	1	0	...	...	...	...	1	1	...	...
33	...	...	12	1	3	0	...	...	...	...	...	...	...	...	...	...	...	...	1	0	...	...	...	...	...	...	3	0
34	...	...	...	...	...	...	...	...	...	...	...	...	3	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...
35	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
36	...	...	...	...	5	0	...	...	...	...	...	...	...	...	...	...	...	...	17	5	2	0	...	...	4	0	...	...
37	...	...	...	...	...	...	1	0	...	...	...	...	...	...	1	1	...	...	2	3	0	1	...	...	...	...	...	...
38	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	2	0	6	2	...	...	...	...	...	...
39	...	...	...	...	...	...	...	...	...	...	...	...	1	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...
40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	0	...	...	...	...	...	...
41	1	0	...	...	2	0	1	0	...	...	...	...	1	0	2	0	...	...	4	2	...	...	...	...	1	0	...	...
42	...	...	...	...	...	...	...	...	...	...	...	...	1	0	...	...	...	...	2	2	...	...	...	...	...	...	...	...
43	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	0	...	...
44	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	0	...	...	...	...	1	0	1	0
45	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	...	...	...	...	...	...
46	50	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	0	...	...	...	...
47	1	0	...	...	26	7	...	...	...	...	...	...	...	...	...	...	1	0	...	...	...	...	...	...	...	...	2	0
48																												
49																												
50							...	...	[illegible]	[illegible]	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	[illegible]	[illegible]
51	1	0	...	...	54	0	1	1	...	...	...	...	...	...	...	...	...	...	1	0	...	...	...	...	1	0	1	0
52	...	...	1	0	6	5	...	...	...	...	...	...	...	...	...	...	0	1	...	...	...	...	...	...	...	...	1	0
53	...	...	...	...	27	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
	22		23		24		25		26		27		28		29		30		31		32		33		34		35	

Marginal Number	36 Oregon		37 Pennsylvania		38 Rhode Island		39 South Carolina		40 South Dakota		41 Tennessee		42 Texas		43 Utah		44 Vermont		45 Virginia		46 Washington		47 West Virginia		48 Wisconsin		49 Wyoming		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Ex. in	Marginal Number
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
1	...	...	...	...	...	...	...	...	...	...	...	...	1	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	47	30	17	36.2	6	1
2	...	...	...	...	...	...	1	0	...	...	1	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	45	39	6	13.3	9	2
3	...	...	...	...	...	...	...	...	...	...	2	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	41	30	11	24.4	6	3
4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	3	4	57.1	2	4
5	...	...	0	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	24	22	2	8.3	4	5
6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13	12	1	7.7	1	6
7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	7	0	0.	1	7
8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	4	0	0.	1	8
9	0	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	8	4	4	50.0	2	9
10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	10	0	0.	1	10
11	3	0	...	...	...	...	...	...	2	0	...	...	1	0	1	0	...	...	...	...	2	0	...	...	1	0	...	...	62	62	0	0.	10	11
12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	26	24	2	7.7	4	12
13	1	0	...	...	...	...	...	...	...	...	...	...	1	0	...	...	1	0	2	0	1	0	...	...	...	...	...	...	31	30	1	3.2	12	13
14	1	0	4	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	32	26	6	19.3	10	14
15	...	...	1	0	1	0	3	0	...	...	1	0	1	0	...	...	...	...	1	0	...	...	2	0	...	...	...	...	37	35	2	5.4	17	15
16	1	0	...	...	...	...	6	3	...	...	3	0	1	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	123	110	13	10.5	9	16
17	...	...	...	...	...	...	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	58	48	10	17.1	7	17
18	...	...	...	...	...	...	0	1	...	...	...	...	0	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	1	3	75.0	4	18
19	...	...	...	...	...	...	0	3	...	...	0	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	26	2	24	92.3	5	19
20	...	...	...	...	...	...	4	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	41	33	8	19.5	4	20
21	...	...	...	...	...	...	...	...	2	0	1	1	...	...	...	...	...	...	...	...	2	0	1	0	2	0	...	...	100	86	14	14.0	19	21
22	...	...	2	3	...	...	1	1	2	0	1	0	2	0	0	1	...	...	...	...	1	0	1	0	3	1	1	0	265	219	46	17.5	32	22
23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	0	...	...	46	41	5	10.9	11	23
24	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16	10	6	40.0	1	24
25	7	0	...	...	...	...	...	...	1	0	...	...	...	...	3	1	...	...	...	...	4	0	...	...	1	0	...	...	97	94	3	3.1	16	25
26	...	...	...	...	...	...	...	...	7	0	...	...	1	0	...	...	...	...	1	0	4	0	3	0	4	0	1	0	179	168	11	6.2	20	26
27	3	0	1	0	...	...	...	...	4	0	...	...	...	...	5	0	...	...	...	...	1	0	...	...	4	0	...	...	124	123	1	0.4	20	27
28	...	...	...	...	...	...	0	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	0	...	...	51	50	1	2.0	4	28
29	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	19	19	0	0.	3	29
30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	7	0	0.	1	30
31	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	9	9	0	0.	2	31
32	1	0	2	4	...	...	1	1	...	...	4	0	7	1	...	...	...	...	1	1	...	...	8	3	...	...	1	0	129	108	21	16.3	22	32
33	...	...	...	...	...	...	...	...	...	...	...	...	12	0	...	...	...	...	...	...	1	0	...	...	...	...	...	...	97	94	3	3.1	11	33
34	1	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	19	16	3	15.8	4	34
35	...	...	...	...	...	...	...	...	...	...	...	...																	1	0	1	100.0	1	35
36	2	0	4	0	...	...	1	0	...	...	1	0																	97	91	6	6.2	22	36
37	...	...	6	1	1	0	1	0	...	...	1	0																	67	51	16	23.5	16	37
38	...	...	5	1	2	0	5	1	...	...	...	...	...	...	...	...	...	...	[illegible]	0	...	...	2	0	...	...	...	...	80	61	19	23.7	16	38
39	...	...	1	0	...	...	2	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16	15	1	6.3	6	39
40	...	...	...	...	...	...	2	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	24	10	14	58.3	7	40
41	2	0	0	2	4	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	0	...	...	78	72	6	7.7	20	41
42	...	...	...	...	5	1	...	...	...	...	...	...	...	...	...	...	1	0	...	...	1	1	...	...	...	...	...	...	106	90	16	15.1	12	42
43	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	28	28	0	0.	2	43
44	2	0	...	...	...	...	1	0	1	0	...	...	...	...	...	...	...	...	...	...	2	0	...	...	...	...	...	...	45	44	1	2.2	12	44
45	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	16	14	2	12.5	2	45
46	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	0	...	...	...	...	...	...	55	55	0	0.	4	46
47	1	0	...	...	...	...	...	...	0	1	11	2	1	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	63	46	17	27.0	14	47
48													...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13	10	3	23.1	2	48
49													...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	13	11	2	15.4	5	49
50	...	...	...	...	...	...	...	...	...	...	...	...	1	0	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	10	0	0.	6	50
51	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	0	...	...	...	...	...	...	...	...	...	...	...	...	81	80	1	1.2	15	51
52	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	19	10	9	47.4	7	52
53	1	0	...	...	...	...	...	...	...	...	...	...	...	...	1	0	...	...	...	...	...	...	...	...	...	...	...	...	36	36	0	0.	6	53
	36		37		38		39		40		41		42		43		44		45		46		47		48		49							

TABLE B—GRADUATES OF 1909 TO 1913, INCLUSIVE,

Marginal Number	NAME OF COLLEGE	1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		Marginal Number
		Alabama		Arizona		Arkansas		California		Colorado		Connecticut		Delaware		District of Columbia		Florida		Georgia		Idaho		Illinois		Indiana		Iowa		Kansas		Kentucky		Louisiana		Maine		Maryland		Massachusetts		Michigan		
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	
	ALABAMA																																											
1	Birmingham Medical College	24	17															1	0	1	0													1	0									1
2	University of Alabama, School of Medicine	22	5			1	0											8	0	1	0													1	0									2
	ARKANSAS																																											
3	University of Arkansas, Medical Dept.					22	9																							1	0			0	1									3
	CALIFORNIA																																											
4	California Eclectic Medical College.—E							2	4																																			4
5	College of Phys. and Surgs, Los Angeles			1	0			20	1																																			5
6	Hahnemann Medical College of the Pacific.—H							12	1																																			6
7	Leland Stanford Junior Univ., Dept. of Med.							7	0																																			7
8	Oakland College of Medicine and Surgery							4	0																																			8
9	College of Phys. and Surgs., San Francisco							4	3																																			9
10	University of California, Medical Dept.							10	0																																			10
	COLORADO																																											
11	University of Colorado, School of Medicine			1	0			5	0	44	0															2	0																	11
	CONNECTICUT																																											
12	Yale University, Medical Dept.											14	1																											1	0			12
	DISTRICT OF COLUMBIA																																											
13	George Washington University, Dept. of Med.															12	0			1	0			2	0													5	0	2	0			13
14	Georgetown University School of Medicine											3	2	1	0	10	0	1	0					1	0															1	0			14
15	Howard University School of Medicine	1	0									0	1			9	0	1	0											3	0	2	0											15
	GEORGIA																																											
16	Atlanta College of Physicians and Surgeons	3	6															10	2	83	0													1	2									16
17	Atlanta School of Medicine	1	4															7	2	32	1													1	0					1	2			17
18	Georgia College of Eclectic Med. and Surg.—E	0	1			1	0																																					18
19	Southern College of Medicine and Surgery	0	2															0	7	2	9																							19
20	University of Georgia, Medical Dept.																	3	3	25	1																			1	1			20
	ILLINOIS																																											
21	Bennett Medical			1	0											2	0							58	10	1	0	1	1			0	1	1	0					1	0	2	0	21
22	Chicago College					1	0	1	1									2	0			1	0	151	29	6	0	9	0	5	0	1	0	1	0					1	2	4	0	22
23	Hahnemann Medi									1	0	2	0											24	5	3	0	2	0	1	0	1	0			1	0							23
24	Jenner Medical College																							10	6																			24
25	Northwestern University Medical School					1	0	3	0															54	1	2	0	7	0															25
26	University of Illinois College of Medicine			1	0			3	1															122	8	3	0	6	0	1	0											2	0	26
27	Rush Medical College			2	0			2	0			1	0											74	0	2	0	6	0	3	0													27
	INDIANA																																											
28	Indiana University School of Medicine			1	0																					48	0																	28
	IOWA																																											
29	State Univ. of Iowa College of Medicine																							1	0			17	0											1	0			29
30	State Univ. of Iowa Coll. of Homeo. Med.—H																											7	0															30
	KANSAS																																											
31	University of Kansas School of Medicine			1	0																									8	0													31
	KENTUCKY																																											
32	University of Louisville, Medical Dept.			1	0							0	4					2	0	4	1					17	1	1	0	1	0	48	4	3	0									32
	LOUISIANA																																											
33	Tulane University, School of Medicine	7	2															4	0	1	0											1	0	40	0									33
	MAINE																																											
34	Medical School of Maine																																			10	1			2	2			34
	MARYLAND																																											
35	Eastern Univ., School of Med., Baltimore.—E																																							0	1			35
36	Johns Hopkins University, Medical Dept.							3	0			3	0	1	0	2	0			3	0	1	0	1	0							4	0					28	1	2	0			36
37	College of Physicians and Surgeons, Baltimore											6	5					1	0			1	0															7	4	4	0			37
38	University of Maryland School of Medicine	1	1					1	0			1	4			2	0	1	0	2	0																	27	9			1	0	38
	MASSACHUSETTS																																											
39	Boston University School of Medicine.—H																																			2	0			8	1	1	0	39
40	College of Physicians and Surgeons,															1	1	1	0																	3	5	0	1	2	7			40
41	Harvard Medical School																							1	0	1	0	1	0							11	0			34	1	1	0	41
42	Tufts College Medical School																							1	0			1	0							6	0	1	0	69	9			42
	MICHIGAN																																											
43	Detroit College of Medicine and Surgery																																									27	0	43
44	Univ. of Michigan, Dept. of Med. and Surg.							1	0	1	0	0	1											1	0																	32	0	44
45	Univ. of Michigan, Homeopathic College.—H																																									13	0	45
	MINNESOTA																																											
46	University of Minnesota, Medical School							1	0																																			46
	MISSOURI																																											
47	American Medical College							0	1									0	2					1	3	1	0			0	1	1	0											47
48	Eclectic Medical University.—E					10	2			0	1																																	48
49	Ensworth Medical																													1	1													49
50	Kansas City Hahn																													5	0													50
51	St. Louis Universit																													3	0													51
52	St. Louis College of Physicians and Surgeons																							0	2			1	1			1	0											52
53	Washington University, Medical School			2	0	1	0																	4	0																			53
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		

H—Homeopathic; E—Eclectic.

Marginal Number	22 Minnesota		23 Mississippi		24 Missouri		25 Montana		26 Nebraska		27 Nevada		28 New Hampshire		29 New Jersey		30 New Mexico		31 New York		32 North Carolina		33 North Dakota		34 Ohio		35 Oklahoma		36 Oregon		37 Pennsylvania		38 Rhode Island		39 South Carolina		40 South Dakota		41 Tennessee		42 Texas		43 Utah		44 Vermont		45 Virginia		46 Washington		47 West Virginia		48 Wisconsin		49 Wyoming		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Ex. in	Marginal Number
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
1																																									1	0															47	30	17	36.2	6	1
2																																			1	0			1	0																	45	39	6	13.3	9	2
3					1	1																							4	0											2	0																	41	30	11	24.4	6	3
4											1	0																																													7	3	4	57.1	2	4
5																													1	0			0	1																							24	22	2	8.3	4	5
6																																																									13	12	1	7.7	1	6
7																																																									7	7	0	0.	1	7
8																																																									4	4	0	0.	1	8
9																															0	1																									8	4	4	50.0	2	9
10																																																									10	10	0	0.	1	10
11																															3	0							2	0			1	0	1	0					2	0			1	0			62	62	0	0.	10	11
12																			8	1					1	0																															26	24	2	7.7	4	12
13																			22	1	1	0							1	0											1	0			1	0	2	0	1	0							31	30	1	3.2	12	13
14															1	0			12	2									1	0	4	2																									32	26	6	19.3	10	14
15					1	0									3	0					2	1			3	0					1	0	1	0	3	0			1	0	1	0					1	0			2	0					37	35	2	5.4	17	15
16			12	0																															6	3			3	0	1	0															123	110	13	10.5	9	16
17			3																																3	1																					58	48	10	17.1	7	17
18																																			0	1					0	1															4	1	3	75.0	4	18
19																																			0	3			0	3																	26	2	24	92.3	5	19
20																																			4	3																					41	33	8	19.5	4	20
21					2	0	2	1	4	0									1	0							2	0									2	0	1	1									2	0	1	0	2	0			100	86	14	14.0	19	21
22			2	0	2	0	1	0	5	0							1	0	3	5	1	0	0	1			3	0			2	3			1	1	2	0	1	0	2	0	0	1					1	0	1	0	3	1	1	0	265	219	46	17.5	32	22
23					1	0			4	0																																											1	0			46	41	5	10.9	11	23
24																																																									16	10	6	40.0	1	24
25	3	0			1	0	3	0	1	0													2	1			1	0	7	0							1	0					3	1													97	94	3	3.1	16	25
26	1	0			2	0	1	1											1	0			2	1			2	0									7	0			1	0															179	168	11	6.2	20	26
27	3	0			4	0	2	0	2	0									2	1			1	0			1	0	3	0	1	0					4	0					5	0													124	123	1	0.4	20	27
28																																			0	1																	1	0			51	50	1	2.0	4	28
29																																																									19	19	0	0.	3	29
30																																																									7	7	0	0.	1	30
31																																																									9	9	0	0.	2	31
32	1	0	1	0											2	0			1	0					1	1			1	0	2	4			1	1			4	0	7	1					1	1			8	3			1	0	129	108	21	16.3	22	32
33			12	1	3	0													1	0							3	0													12	0							1	0							97	94	3	3.1	11	33
34													3	0															1	0																											19	16	3	15.8	4	34
35																																																									1	0	1	100.0	1	35
36					5	0													17	5	2	0			4	0			2	0	4	0			1	0			1	0	1	0	1	0			4	0	1	0							97	91	6	6.2	22	36
37							1	0							1	1			2	3	0	1									6	1	1	0	1	0			1	0			6	0							12	1	1	0			67	51	16	23.5	16	37
38															1	1			2	0	6	2									5	1	2	0	5	1											2	0			2	0					80	61	19	23.7	16	38
39													1	0																	1	0			2	0																					16	15	1	6.3	6	39
40																					1	0													2	0																					24	10	14	58.3	7	40
41	1	0			2	0	1	0					1	0	2	0			4	2					1	0			2	0	0	2	4	1																			1	0			78	72	6	7.7	20	41
42													1	0					2	2													5	1											1	0			1	1							106	90	16	15.1	12	42
43																									1	0																															28	28	0	0.	2	43
44																			1	0					1	0	1	0	2	0					1	0	1	0											2	0							45	44	1	2.2	12	44
45																			1	2																																					16	14	2	12.5	2	45
46	50	0																					2	0																									2	0							55	55	0	0.	4	46
47	1	0			26	7											1	0									2	0	1	0							0	1	11	2	1	0															63	46	17	27.0	14	47
48																																																									13	10	3	23.1	2	48
49																																																									13	11	2	15.4	5	49
50																																									1	0															10	10	0	0.	6	50
51	1	0			5																																						1	0													81	80	1	1.2	15	51
52			1	0																																																					19	10	9	47.4	7	52
53					2																								1	0													1	0													36	36	0	0.	6	53
	22		23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49							

TABLE B.—GRADUATES OF 1909 TO 1913, INCLUSIVE,

Marginal Number	NAME OF COLLEGE	1 Alabama		2 Arizona		3 Arkansas		4 California		5 Colorado		6 Connecticut		7 Delaware		8 District of Columbia		9 Florida		10 Georgia		11 Idaho	
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F
	NEBRASKA																						
54	John A.							1	0													2	0
55	Cotner																						
56	Universi																						
	NEW HAMPSHIRE																						
57	Dartmouth Medical School											1	0										
	NEW YORK																						
58	Albany Medical College													1	0								
59	Columbia University, Coll. of Phys. and Surgs.							1	0			1	1							1	0		
60	Cornell University Medical College							1	0									1	0				
61	Fordham University, School of Medicine											2	1										
62	Long Island College Hospital							1	0			2	1			1	0						
63	New York Homeo. Med. Coll. and Hosp.—H.											5	0			2	0						
64	New York Med. Coll. and Hosp. for Women.—H																						
65	Syracuse University College of Medicine																						
66	University and Bellevue Hospital Medical Coll																						
67	University of Buffalo, Medical Dept.							1	0														
	NORTH CAROLINA																						
68	Leonard Medical School	0	1															0	1	1	0		
69	North Carolina Medical College																	1	0	1	0		
	OHIO																						
70	Cleveland-Pulte Medical College.—H.																						
71	Eclectic Medical College.—E.					6	0	0	1														
	Ohio-Miami Medical College	1	0					1	0														
	Starling-Ohio Medical College																						
	Toledo Medical College																						
	Western Reserve University, School of Medicine																						
	OKLAHOMA																						
76	University of Oklahoma, School of Medicine																						
	OREGON																						
77	University of Oregon, Medical Dept.																						
	PENNSYLVANIA																						
78	Hahnemann Medical College and Hospital.—H.																						
79	Jefferson Medical College	2	0			2	0					6	0	5	0			1	0				
80	Medico-Chirurgical College of Philadelphia																					1	0
81	Temple University, Medical Dept.															1	0						
82	University of Pennsylvania, School of Medicine	2	0					1	0					1	0	1	0			1	0		
83	University of Pittsburgh, Medical Dept.							1	1					1	0								
84	Woman's Medical College of Pennsylvania									1	0	1	0			2	0						
	SOUTH CAROLINA																						
85	Medical College of South Carolina																	1	1	1	0		
	TENNESSEE																						
86	Lincoln Memorial University, Medical Dept.																						
87	Meharry Medical College	2	0			4	7											3	3	7	7		
88	University of Tenne	0	3			6	1																
89	University of West																	1	1				
90	Vanderbilt Universit	8	0			1	0	4	0							1	0	7	0			2	0
	TEXAS																						
91	Baylor University College o																						
92	Texas Christian University,																						
93	Southern Methodist Universi																						
94	University of Texas, Dept. of Medicine																						
	VERMONT																						
95	University of Vermont College of Medicine							1	0			8	8										
	VIRGINIA																						
96	Medical College of Virginia																						
97	University of Virginia, Dept. of Medicine	1	0			1	0											2	0				
98	University College of Medicine, Richmond	0	1											1	0								
	WISCONSIN																						
99	Marquette University, Medical Dept.																						
	CANADIAN																						
100	Laval University,																						
101	McGill University,											1	0										
102	Queen's University, Faculty of Medicine																						
103	University of Manitoba, Manitoba Med. Coll.																						
104	University of Toronto, Medical Faculty																	1	0				
105	Foreign Colleges			1	0			1	1					0	1			0	1				
106	Miscellaneous Medical Colleges	7	8			14	7	4	2			2	17			2	4	6	4	2	2		
	Totals by States	134		14		98		117		50		116		12		53		96		190		9	
	Totals—Examined—Passed	81		14		72		100		49		68		11		48		68		169		9	
	Totals—Examined—Failed	53		0		26		17		1		48		1		5		28		21		0	
	Percentage of Failures	39.5		0.		26.5		14.5		2.0		32.1		8.3		9.4		29.6		11.0		0.	
		1		2		3		4		5		6		7		8		9		10		11	

Marginal Number	NAME OF COLLEGE	12 Illinois		13 Indiana		14 Iowa		15 Kansas		16 Kentucky		17 Louisiana		18 Maine		19 Maryland		20 Massachusetts		21 Michigan		Marginal Number
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	
	NEBRASKA																					
54	John A.							1	0													54
55	Cotner																					55
56	Universi																					56
	NEW HAMPSHIRE																					
57	Dartmouth Medical School																	6	1			57
	NEW YORK																					
58	Albany Medical College	1	0															1	0			58
59	Columbia University, Coll. of Phys. and Surgs.					1	0	1	0					1	0			1	1			59
60	Cornell University Medical College																	1	0			60
61	Fordham University, School of Medicine																					61
62	Long Island College Hospital																					62
63	New York Homeo. Med. Coll. and Hosp.—H.																	1	0			63
64	New York Med. Coll. and Hosp. for Women.—H																	1	0			64
65	Syracuse University College of Medicine																			1	0	65
66	University and Bellevue Hospital Medical Coll																	2	0			66
67	University of Buffalo, Medical Dept.																	1	0	1	0	67
	NORTH CAROLINA																					
68	Leonard Medical School																					68
69	North Carolina Medical College																					69
	OHIO																					
70	Cleveland-Pulte Medical College.—H.																					70
71	Eclectic Medical College.—E.			2	0											0	1					71
	Ohio-Miami Medical College									1	0											72
	Starling-Ohio Medical College																					73
	Toledo Medical College																					74
	Western Reserve University, School of Medicine																	1	0			75
	OKLAHOMA																					
76	University of Oklahoma, School of Medicine																					76
	OREGON																					
77	University of Oregon, Medical Dept.																					77
	PENNSYLVANIA																					
78	Hahnemann Medical College and Hospital.—H.																	1	0			78
79	Jefferson Medical College	2	0			2	0			2	0	1	0			6	0	2	0	1	0	79
80	Medico-Chirurgical College of Philadelphia															2	0					80
81	Temple University, Medical Dept.															1	1					81
82	University of Pennsylvania, School of Medicine			2	0	1	0									3	0					82
83	University of Pittsburgh, Medical Dept.																			1	0	83
84	Woman's Medical College of Pennsylvania															5	0	4	1			84
	SOUTH CAROLINA																					
85	Medical College of South Carolina																					85
	TENNESSEE																					
86	Lincoln Memorial University, Medical Dept.									2	1											86
87	Meharry Medical College	4	6					6	2	2	2	0	1			0	3					87
88	University of Tenne	1	0					0	1			2	4									88
89	University of West																					89
90	Vanderbilt Universit	1	0			1	0			5	0	1	0									90
	TEXAS																					
91	Baylor University College o	1	0																			91
92	Texas Christian University,											1	0									92
93	Southern Methodist Universi																					93
94	University of Texas, Dept. of Medicine	1	0																			94
	VERMONT																					
95	University of Vermont College of Medicine																	10	1			95
	VIRGINIA																					
96	Medical College of Virginia															2	1	2	0			96
97	University of Virginia, Dept. of Medicine																			1	0	97
98	University College of Medicine, Richmond																					98
	WISCONSIN																					
99	Marquette University, Medical Dept.	1	0															1	0			99
	CANADIAN																					
100	Laval University,													1	0			1	0			100
101	McGill University,																	1	0	1	0	101
102	Queen's University, Faculty of Medicine																	1	0			102
103	University of Manitoba, Manitoba Med. Coll.																					103
104	University of Toronto, Medical Faculty																			2	1	104
105	Foreign Colleges	0	1									1	0			0	1	1	2			105
106	Miscellaneous Medical Colleges	15	11			25	0	45	2	4	4	3	10	3	2	14	15	2	7	1	0	106
	Totals by States	623		91		99		92		88		85		47		138		210		93		
	Totals—Examined—Passed	541		90		97		85		76		67		39		101		171		92		
	Totals—Examined—Failed	82		1		2		7		12		18		8		37		39		1		
	Percentage of Failures	13.2		1.0		2.0		7.6		18.6		21.2		17.0		36.6		18.6		1.0		
		12		13		14		15		16		17		18		19		20		21		

H—Homeopathic; E—Eclectic.

	22		23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49							
Marginal Number	Minnesota		Mississippi		Missouri		Montana		Nebraska		Nevada		New Hampshire		New Jersey		New Mexico		New York		North Carolina		North Dakota		Ohio		Oklahoma		Oregon		Pennsylvania		Rhode Island		South Carolina		South Dakota		Tennessee		Texas		Utah		Vermont		Virginia		Washington		West Virginia		Wisconsin		Wyoming		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Ex. in	Marginal Number
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
54	..	..	..	..	..	..	5	1	37	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	2	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	1	0	..	..	54	51	3	5.6	9	54
55	..	..	..	..	..	..	..	..	7	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	9	9	0	0.	3	55
56	..	..	..	..	..	..	..	..	10	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	11	11	0	0.	2	56
57	..	..	..	..	..	..	1	0	..	..	..	..	3	1	1	0	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	15	13	2	13.3	6	57
58	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	41	21	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	67	46	21	31.3	6	58
59	..	..	2	0	4	0	..	..	..	..	..	..	..	..	1	0	..	..	86	12	3	0	..	..	..	..	..	..	..	..	3	0	3	0	1	0	..	..	..	..	1	0	..	..	1	0	..	..	1	0	..	..	..	..	..	..	127	113	14	11.0	18	59
60	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	20	1	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	27	26	1	3.7	7	60
61	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	15	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	28	19	9	32.1	3	61
62	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	0	..	..	77	29	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	115	85	30	26.1	5	62
63	..	..	..	..	..	..	1	0	..	..	..	..	..	..	8	1	..	..	18	10	..	..	..	..	..	..	..	..	..	..	1	0	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	58	37	21	36.2	8	63
64	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	[illegible]	[illegible]																																					9	7	2	22.2	2	64
65	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..																																							36	30	6	16.7	6	65
66	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9	2	..	..																																							89	82	7	7.9	7	66
67	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..																																							52	40	12	23.1	6	67
68	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	12	..	..	..	..	..	..	..	..	0	2	..	..	6	5	..	..	3	0	1	0	..	..	..	..	1	1	..	..	6	4	..	..	..	..	50	24	26	52.9	10	68
69	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	23	6	..	..	..	..	..	..	..	..	..	..	..	..	3	2	..	..	1	0	..	..	..	..	..	..	2	0	..	..	1	0	..	..	..	..	40	32	8	20.0	7	69
70	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	21	1	..	..	2	0	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	27	25	2	7.5	4	70
71	..	..	..	..	1	0	..	..	..	..	1	0	..	..	..	..	1	0	..	..	..	..	..	..	14	0	..	..	..	..	2	0	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	0	1	2	2	..	..	..	..	35	30	5	14.3	12	71
72	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	0	1	..	..	..	..	25	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	31	30	1	3.2	7	72
73	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	52	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	53	52	1	1.9	1	73
74	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	15	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	15	15	0	0.	1	74
75	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	27	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	30	30	0	0.	4	75
76	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9	9	0	0.	1	76
77	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	12	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	0	..	..	..	..	..	..	21	19	2	9.5	2	77
78	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	1	[illegible]											26	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	35	31	4	11.4	5	78
79	1	0	2	0	..	..	2	0	1	0	..	..	..	..	9	0	..	..	2													7	..	..	2	0	..	..	..	..	..	..	1	0	..	..	1	0	7	0	..	..	..	..	..	..	137	127	10	7.3	27	79
80	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	2													4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	63	56	7	11.1	7	80
81	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..													3	..	..	..	..	1	[illegible]																			25	20	5	20.0	6	81
82	..	..	..	..	..	..	..	..	1	0	..	..	..	..	10	0	..	..	9													2	1	0	1	0	..	..																			127	120	7	5.5	22	82
83	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	1	..	..	..	..	..	..	..	..	..	..	50	4	..	..	..	..	..	..																			62	55	7	11.3	7	83
84	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	4	3	..	..	..	..	..	..	..	..	..	..	14	1	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	38	33	5	13.2	9	84
85	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	1	..	..	..	..	..	..	..	..	..	..	..	..	36	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	46	38	8	17.4	4	85
86	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	3	6	..	..	..	..	..	..	0	1	..	..	1	0	..	..	..	..	18	8	10	55.6	5	86
87	0	1	1	1	1	2	..	..	1	0	..	..	..	..	..	..	..	..	..	..	0	1	..	..	..	..	1	1	..	..	..	..	..	..	2	3	..	..	51	3	11	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	143	96	47	32.9	18	87
88	..	..	4	3	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	0	2	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	19	0	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	35	15	30.0	11	88
89	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	2	..	..	5	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	16	6	10	62.5	3	89
90	..	..	6	0	2	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	1	0	..	..	..	..	..	..	1	0	..	..	26	2	9	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	76	74	2	2.6	18	90
91	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	19	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	22	21	1	4.5	3	91
92	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	14	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	19	18	1	5.3	4	92
93	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14	14	0	0.	1	93
94	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	36	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	38	38	0	0.	3	94
95	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	3	4	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	19	0	..	..	..	..	..	..	..	..	..	..	58	44	14	24.2	7	95
96	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	2	0	4	2	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	25	12	..	..	4	0	..	..	..	..	58	43	15	25.8	10	96
97	..	..	1	0	..	..	..	..	..	..	..	..	..	..	1	0	..	..	2	1	3	0	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	3	0	..	..	..	..	..	..	..	..	18	17	1	5.5	9	97
98	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	1	0	8	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	31	2	..	..	3	1	..	..	..	..	52	47	5	10.2	8	98
99	0	1	..	..	2	0	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	2	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	70	8	1	0	90	78	12	13.3	9	99
100	0	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	2	..	..	..	..	..	..	..	..	0	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	2	4	66.7	5	100
101	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	7	1	12.5	5	101
102	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	..	..	0	1	..	..	..	..	..	..	1	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	10	7	3	30.0	7	102
103	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	0	0.	1	103
104	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	6	1	14.3	5	104
105	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	4	..	..	..	..	1	0	..	..	..	..	0	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	1	..	..	..	..	..	..	22	9	13	59.1	13	105
106	..	..	17	10	26	3	2	2	4	0	..	..	2	1	1	0	..	..	9	6	1	0	..	..	14	0	8	2	7	6	8	2	..	..	3	6	..	..	34	14	7	0	..	..	..	..	5	0	2	1	4	3	..	..	1	0	471	313	158	33.5	34	106
	71		73		196		33		83		3		15		70		5		655		106		20		188		55		63		381		28		131		24		211		155		22		23		97		48		68		104		6		5390					
	68		57		177		26		81		3		12		65		4		482		75		12		185		52		53		331		24		92		23		171		147		20		23		80		43		54		95		6		....	4500				
	3		16		19		7		2		0		3		5		1		173		31		8		3		3		10		50		4		39		1		40		8		2		0		17		5		14		9		0		....	....	881			
	4.2		21.9		9.7		21.2		2.4		0.		21.4		7.1		20.0		26.4		29.2		40.0		1.6		5.5		15.5		13.3		14.2		42.4		4.2		1.9		5.2		8.0		0.		17.5		11.6		20.6		8.7		0.		....	....	....	16.5		
	22		23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49							

Marginal Number	NAME OF COLLEGE	Graduates of All Years					Graduates of 1909-1913					Graduates of 1908 and Previous					Graduates of 1913					Marginal Number
		Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	
	ALABAMA																					
1	Birmingham Medical College	51	31	20	39.2	7	47	30	17	36.2	6	4	1	3	75.0	2	24	12	12	50.0	3	1
2	University of Alabama	49	43	6	12.2	10	45	39	6	13.3	9	4	4	0	0.	3	18	16	2	11.1	5	2
	ARKANSAS																					
3	University of Arkansas	41	30	11	26.9	6	41	30	11	24.4	6	.....	.....	.....	.....	.....	31	25	6	19.4	3	3
	CALIFORNIA																					
4	California Eclectic Medical College.—E	8	3	5	62.5	2	7	3	4	57.1	2	1	0	1	100.0	1	7	3	4	57.1	2	4
5	College of Phys. and Surgs., Los Angeles	24	22	2	8.3	4	24	22	2	8.3	4	.....	.....	.....	.....	.....	22	21	1	4.5	2	5
6	Hahnemann Medical College of the Pacific.—H	15	13	2	13.3	3	13	12	1	7.7	1	2	1	1	50.0	2	10	10	0	0.	1	6
7	Leland Stanford Junior University	7	7	0	0.	1	7	7	0	0.	1	.....	.....	.....	.....	.....	7	7	0	0.	1	7
8	Oakland College of Medicine and Surgery	4	4	0	0.	1	4	4	0	0.	1	.....	.....	.....	.....	.....	3	3	0	0.	1	8
9	College of Phys. and Surgs., San Francisco	10	4	6	60.0	3	8	4	4	50.0	2	2	0	2	100.0	2	1	1	0	0.	1	9
10	University of California, Medical Dept.	14	13	1	7.2	2	10	10	0	0.	1	4	3	1	25.0	2	9	9	0	0.	1	10
	COLORADO																					
11	University of Colorado, School of Medicine	64	64	0	0.	11	62	62	0	0.	10	2	2	0	0.	2	38	38	0	0.	5	11
	CONNECTICUT																					
12	Yale University, Medical Dept.	29	27	2	6.9	4	26	24	2	7.7	3	3	3	0	0.	2	3	3	0	0.	2	12
	DISTRICT OF COLUMBIA																					
13	George Washington University, Dept. of Med.	37	35	2	5.4	13	31	31	1	3.2	12	6	5	1	16.7	5	8	8	0	0.	4	13
14	Georgetown University School of Medicine	35	28	7	20.0	12	32	26	6	19.3	10	3	2	1	33.3	3	10	9	1	10.0	6	14
15	Howard University School of Medicine	38	35	3	7.9	17	37	35	2	5.4	17	1	0	1	100.0	1	10	10	0	0.	8	15
	GEORGIA																					
16	Atlanta College of Physicians and Surgeons	128	113	15	11.7	10	123	110	13	10.6	10	5	3	2	40.0	4	116	105	11	9.5	9	16
17	Atlanta School of Medicine	59	48	11	18.6	7	58	48	10	17.1	8	1	0	1	100.0	1	40	37	3	7.5	4	17
18	Georgia College of Eclectic Med. and Surg.—E	4	1	3	75.0	4	4	1	3	75.0	4	.....	.....	.....	.....	.....	1	0	1	100.0	1	18
19	Southern College of Medicine and Surgery	26	2	24	92.3	5	26	2	24	92.3	5	.....	.....	.....	.....	.....	20	2	18	90.0	5	19
20	University of Georgia, Medical Dept.	42	34	8	19.0	4	41	33	8	19.5	4	1	1	0	0.	1	33	31	2	6.1	4	20
	ILLINOIS																					
21	Bennett Medical [illegible]	104	90	14	13.5	23	100	86	14	14.0	19	4	4	0	0.	4	62	51	11	17.7	10	21
22	Chicago College [illegible]	266	220	46	17.3	32	265	219	46	17.4	32	1	1	0	0.	1	205	183	22	10.7	25	22
23	Hahnemann Medi[illegible]	59	50	9	15.3	17	46	41	5	10.9	11	13	9	4	30.8	9	28	27	1	3.6	6	23
24	Jenner Medical College	17	10	7	41.2	2	16	10	6	40.0	1	1	0	1	100.0	1	10	8	2	20.0	1	24
25	Northwestern University Medical School	116	112	4	3.4	20	97	94	3	3.1	16	19	18	1	5.3	10	55	54	1	1.8	5	25
26	University of Illinois College of Medicine	199	186	13	6.5	23	179	168	11	6.2	20	20	18	2	10.0	10	126	123	3	2.4	9	26
27	Rush Medical College	153	151	2	1.3	24	124	123	1	0.4	20	29	28	1	3.4	17	88	88	0	0.	14	27
	INDIANA																					
28	Indiana University School of Medicine	52	50	2	3.8	5	51	50	1	2.0	4	1	0	1	100.0	1	47	47	0	0.	1	28
	IOWA																					
29	State Univ. of Iowa, College of Medicine	26	25	1	3.8	8	19	19	0	0.	3	7	6	1	14.3	6	17	17	0	0.	2	29
30	State Univ. of Iowa, College of Homeo. Med.—H	7	7	0	0.	1	7	7	0	0.	1	.....	.....	.....	.....	.....	6	6	0	0.	1	30
	KANSAS																					
31	University of Kansas School of Medicine	10	10	0	0.	3	9	9	0	0.	2	1	1	0	0.	1	7	7	0	0.	1	31
	KENTUCKY																					
32	University of Louisville, Medical Dept.	140	114	26	21.4	26	129	108	21	16.3	22	11	6	5	45.5	8	83	79	4	4.8	13	32
	LOUISIANA																					
33	Tulane University, Medical Dept.	101	96	5	4.9	13	97	94	3	3.1	11	4	2	2	50.0	3	68	67	1	1.5	8	33
	MAINE																					
34	Medical School of Maine	31	26	5	16.1	8	19	16	3	15.8	4	12	10	2	16.7	6	13	11	2	15.4	3	34
	MARYLAND																					
35	Eastern Univ., School of Med., Baltimore.—E	1	0	1	100.0	1	1	0	1	100.0	[illegible]						1	0	1	100.0	1	35
36	Johns Hopkins University, Medical Dept.	104	98	6	5.8	23	97	91	6	6.2							55	53	2	3.6	16	36
37	College of Physicians and Surgeons, Baltimore	74	56	18	24.3	19	67	51	16	23.5							36	30	6	16.7	9	37
38	University of Maryland School of Medicine	88	66	22	25.0	18	80	61	19	23.7	16	8	5	3	37.5	6	45	41	4	8.9	10	38
	MASSACHUSETTS																					
39	Boston University School of Medicine.—H	23	22	1	4.4	8	16	15	1	6.3	6	7	7	0	0.	5	11	10	1	9.1	3	39
40	College of Physicians and Surgeons, Boston	25	10	16	60.0	8	24	10	14	58.3	7	1	0	1	100.0	1	7	2	5	71.4	3	40
41	Harvard Medical School	94	87	7	7.4	23	78	72	6	7.7	20	16	15	1	6.3	12	34	31	3	8.8	9	41
42	Tufts College Medical School	109	92	17	15.6	13	106	90	16	15.1	12	3	2	1	33.3	3	71	61	10	14.1	6	42
	MICHIGAN																					
43	Detroit College of Medicine and Surgery	34	34	0	0.	8	28	28	0	0.	2	6	6	0	0.	6	27	27	0	0.	2	43
44	Univ. of Michigan, Dept. of Med and Surg.	62	60	2	3.2	16	45	44	1	2.2	12	17	16	1	5.9	10	33	33	0	0.	4	44
45	Univ. of Michigan, Homeopathic College	18	16	2	10.5	4	16	14	2	12.5	2	2	2	0	0.	3	12	12	0	0.	1	45
	MINNESOTA																					
46	University of Minnesota Medical College	62	61	1	1.6	6	55	55	0	0.	4	7	6	1	14.3	5	43	43	0	0.	1	46
	MISSOURI																					
47	American Medical College	90	61	29	32.2	19	63	46	17	27.0	14	27	15	12	44.4	12	43	36	7	16.3	8	47
48	Eclectic Medical University.—E	15	11	4	26.7	3	13	10	3	23.1	2	2	1	1	50.0	2	11	9	2	18.2	1	48
49	Ensworth Medical College	17	12	5	29.4	9	13	11	2	15.4	5	4	1	3	75.0	4	10	10	0	0.	4	49
50	Kansas City Hahnemann Medical College.—H	10	10	0	0.	6	10	10	0	0.	[illegible]						6	6	0	0.	3	50
51	St. Louis University School of Medicine	85	82	3	3.5	17	81	80	1	1.2							71	69	2	2.8	11	51
52	St. Louis College of Physicians and Surgeons	34	16	18	52.9	13	19	10	9	47.4							10	6	4	40.0	3	52
53	Washington University, Medical Dept.	45	45	0	0.	9	36	36	0	0.	6	9	9	0	0.	6	28	28	0	0.	2	53

H—Homeopathic; E—Eclectic.

Marginal Number	NAME OF COLLEGE	Graduates of All Years					Graduates of 1909-1913					Graduates of 1908 and Previous					Graduates of 1913					Marginal Number
		Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	
	NEBRASKA																					
54	John A. Creighton Medical College	57	53	4	7.0	11	54	51	3	5.6	9	3	2	1	33.3	3	20	20	0	0.	3	54
55	Cotner Medical College.—E	11	10	1	9.1	5	9	9	0	0.	3	2	1	1	50.0	2	8	8	0	0.	2	55
56	University of Nebraska, College of Medicine	13	12	1	7.7	4	11	11	0	0.	2	2	1	1	50.0	2	9	9	0	0.	1	56
	NEW HAMPSHIRE																					
57	Dartmouth Medical School	18	16	2	11.1	6	15	13	2	13.3	6	3	3	0	0.	2	7	7	0	0.	4	57
	NEW YORK																					
58	Albany Medical College	69	48	21	30.4	8	67	46	21	31.3	6	3	1	2	66.7	1	32	16	16	50.0	4	58
59	Columbia [illegible]	147	131	16	10.9	27	127	113	14	11.0	18	20	18	2	10.0	14	70	67	3	4.3	9	59
60	Cornell Ur[illegible]	29	28	1	3.4	7	27	26	1	3.7	7	2	2	0	0.	2	12	12	0	0.	1	60
61	Fordham [illegible]	28	19	9	32.1	3	28	19	9	32.1	3	....	....	....	....	....	9	8	1	11.1	1	61
62	Long Island College Hospital	118	88	30	25.4	7	115	85	30	26.1	6	3	3	0	0.	3	43	35	8	18.6	2	62
63	New York Homeopathic Med. Coll. and Hosp.—H	60	39	21	35.0	10	58	37	21	36.2	8	2	2	0	0.	2	43	29	14	32.6	7	63
64	New York Med. Coll. and Hosp. for Women.—H.	11	9	2	18.2	4	9	7	2	22.2	2	2	2	0	0.	2	9	7	2	22.2	2	64
65	Syracuse University College of Medicine	39	31	8	20.6	8	36	30	6	16.7	6	3	1	2	66.7	3	12	11	1	8.3	1	65
66	University and Bellevue Hospital Med. College	92	85	7	7.6	10	89	82	7	7.9	7	3	3	0	0.	3	52	48	4	7.7	3	66
67	University of Buffalo, Medical Dept.	58	43	15	25.9	10	52	40	12	23.1	6	6	3	3	50.0	6	25	20	5	20.0	1	67
	NORTH CAROLINA																					
68	Leonard Medical School	53	25	28	51.9	10	50	24	26	52.9	10	3	1	2	66.7	1	32	16	16	50.0	4	68
69	North Carolina Medical College	42	32	10	23.8	7	40	32	8	20.0	7	2	0	2	100.0	2	32	28	4	12.5	5	69
	OHIO																					
70	Cleveland Pulte Medical College.—H	27	25	2	7.5	4	27	25	2	7.5	4	....	....	....	....	....	25	23	2	8.0	4	70
71	[illegible]	40	34	6	15.0	15	35	30	5	14.3	12	5	4	1	20.0	5	27	26	1	3.7	9	71
72	[illegible]	31	30	1	3.2	7	31	30	1	3.2	7	....	....	....	....	....	26	26	0	0.	3	72
73	[illegible]	54	53	1	1.9	2	53	52	1	1.9	1	1	1	0	0.	1	53	52	1	1.9	1	73
74	[illegible]	15	15	0	0.	1	15	15	0	0.	1	....	....	....	....	....	15	15	0	0.	1	74
75	[illegible]	31	31	0	0.	5	30	30	0	0.	4	1	1	0	0.	1	26	26	0	0.	1	75
	OKLAHOMA																					
76	University of Oklahoma, Medical School	9	9	0	0.	1	9	9	0	0.	1	....	....	....	....	....	9	9	0	0.	1	76
	OREGON																					
77	University of Oregon, Medical Dept.	23	21	2	8.7	3	21	19	2	9.5	2	2	2	0	0.	2	7	7	0	0.	2	77
	PENNSYLVANIA																					
78	Hahnemann Medical College and Hospital.—H	41	37	4	9.8	9	35	31	4	11.4	5	6	6	0	0.	6	24	23	1	4.2	2	78
79	Jefferson Medical College	154	140	14	9.1	32	137	127	10	7.3	27	17	13	4	23.5	14	84	78	6	7.1	16	79
80	Medico-Chirurgical College of Philadelphia	69	61	8	11.6	10	63	56	7	11.1	7	6	5	1	16.7	4	33	32	1	3.0	6	80
81	Temple University, Medical Dept.	25	20	5	20.0	6	25	20	5	20.0	6	....	....	....	....	....	9	9	0	0.	2	81
82	University of Pennsylvania, Medical Dept.	146	139	7	4.8	25	127	120	7	5.5	22	19	19	0	0.	12	74	72	2	2.7	11	82
83	University of Pittsburgh, Medical Dept.	62	55	7	11.3	7	62	55	7	11.3	7	....	....	....	....	....	46	43	3	6.5	3	83
84	Woman's Medical College of Pennsylvania	43	37	6	14.0	11	38	33	5	13.2	9	5	4	1	20.0	4	23	20	3	13.0	5	84
	SOUTH CAROLINA																					
85	Medical College of South Carolina	49	40	9	4.9	4	46	38	8	17.4	4	3	2	1	33.3	2	30	28	2	6.7	1	85
	TENNESSEE																					
86	Lincoln Memorial University, Medical Dept.	20	8	12	60.0	7	18	8	10	55.6	5	2	0	2	100.0	2	9	3	6	66.7	2	86
87	Meharry Medical College	158	102	56	35.4	20	143	96	47	32.9	18	15	6	9	60.0	8	96	80	16	16.7	14	87
88	University of Tennessee, Medical Dept.	55	39	16	29.1	12	50	35	15	30.0	11	5	4	1	20.0	3	37	29	8	21.6	8	88
89	University of West Tennessee, Medical Dept.	16	6	10	62.5	3	16	6	10	62.5	3	....	....	....	....	....	9	4	5	55.6	3	89
90	Vanderbilt University, Medical Dept.	80	75	5	6.2	19	76	74	2	2.6	18	4	1	3	75.0	4	54	52	2	3.7	12	90
	TEXAS																					
91	Baylor University College of Medicine	22	21	1	4.5	3	22	21	1	4.5	3	....	....	....	....	....	20	19	1	5.0	2	91
92	Texas Christian University, School of Medicine	19	18	1	5.3	4	19	18	1	5.3	4	....	....	....	....	....	11	11	0	0.	3	92
93	Southern Methodist University, Medical Dept.	14	14	0	0.	1	14	14	0	0.	1	....	....	....	....	....	13	13	0	0.	1	93
94	University of Texas, Medical Dept.	40	39	1	2.5	5	38	38	0	0.	3	2	1	1	50.0	2	34	34	0	0.	2	94
	VERMONT																					
95	University of Vermont College of Medicine	61	45	16	26.2	7	58	44	14	24.2	7	3	1	2	66.7	1	30	29	1	3.3	6	95
	VIRGINIA																					
96	Medical College of Virginia	61	45	16	26.2	11	58	43	15	25.8	10	3	2	1	33.3	3	45	31	14	31.1	6	96
97	University of Virgi[illegible]	29	27	2	6.9	14	18	17	1	5.6	9	11	10	1	9.1	7	8	8	0	0.	5	97
98	University College [illegible]	54	49	5	9.3	8	52	47	5	10.2	8	2	2	0	0.	2	42	39	3	7.1	3	98
	WISCONSIN																					
99	Marquette University, Medical Dept.	90	78	12	13.3	9	90	78	12	13.3	9	....	....	....	....	....	71	67	4	5.6	5	99
	CANADIAN																					
100	Laval University, Medical Dept.	11	4	7	63.6	8	6	2	4	66.7	5	5	2	3	60.0	5	1	1	0	0.	1	100
101	McGill University, Medical Faculty	15	14	1	6.7	8	8	7	1	12.5	5	7	7	0	0.	4	5	5	0	0.	4	101
102	Queen's University Medical Faculty	15	9	6	40.0	8	10	7	3	30.0	7	5	2	3	60.0	3	2	2	0	0.	2	102
103	University of Manitoba, Manitoba Med. Coll.	2	2	0	0.	2	1	1	0	0.	1	1	1	0	0.	1	1	1	0	0.	1	103
104	University of Toronto, Faculty of Medicine	15	12	3	20.0	10	7	6	1	14.3	5	8	6	2	25.0	6	....	....	....	....	....	104
105	Foreign Colleges	89	47	42	47.2	24	22	9	13	59.1	13	67	38	29	43.3	22	1	0	1	100.0	1	105
106	Miscellaneous Medical Colleges	698	466	232	33.2	43	471	313	158	33.5	35	227	154	73	32.1	38	261	213	48	18.3	28	106
107	Undergraduates	251	156	95	37.8	7	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	107
	Totals	6435	5236	1199	18.6	....	5390	4509	881	16.5	....	794	571	223	28.1	....	3465	3112	353	10.2	....	

H—Homeopathic; E—Eclectic.

TABLE D—NON-RECOGNITION OF MEDICAL COLLEGES

This Table, Based on Official Reports, Shows the Numerous Pitfalls to be Avoided by Prospective Medical Students

Marginal Number.	COLLEGE	Classification by Council on Medical Education.†	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	Reported Non-Recognition by State Licensing Boards.			Marginal Number.
			Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. of Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	Porto Rico	No. of State Boards apparently giving full recognition.	No. of State Boards reporting college not fully recognized.	Percentage of State Boards granting full recognition.	
1	Birmingham Medical College	B	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	x	b	..	..	..	..	..	x	x	..	x	..	b	x	..	..	x	x	..	c	..	..	..	..	x	..	..	..	..	..	35	15	70	1
2	University of Alabama, School of Medicine	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	x	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	42	8	84	2
3	University of Arkansas, Medical Dept.	B	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	x	b	..	..	..	..	..	x	..	..	..	..	b	x	..	..	x	x	..	c	..	..	..	..	x	..	..	..	..	..	37	13	74	3
4	College of Physicians and Surgeons, San Francisco	C	x	..	x	..	x	x	x	..	x	x	..	..	x	x	..	x	x	..	x	..	x	x	x	..	..	..	..	x	x	x	x	..	x	x	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	18	32	36	4
5	Hahnemann Medical College of the Pacific	B	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	x	x	..	x	..	b	..	..	..	..	x	..	c	..	..	..	..	x	..	..	..	..	..	38	12	76	5
6	Leland Stanford Junior Univ., Dept. of Medicine	A+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	6
7	University of California, Medical Dept.	A+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	7
8	California Eclectic Medical College	C	x	..	..	..	x	..	x	..	..	x	..	..	x	x	..	x	x	..	x	..	x	x	x	..	..	..	..	x	x	x	x	..	x	x	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	21	29	42	8
9	College of Physicians and Surgeons, Los Angeles	B	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	x	b	..	..	..	..	..	x	..	..	..	..	b	x	..	..	..	x	..	c	..	..	..	..	x	..	..	..	..	..	38	12	76	9
10	Oakland College of Medicine and Surgery	B	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	x	b	..	..	..	..	..	x	x	..	x	..	b	x	..	..	..	x	..	c	..	..	..	..	x	..	..	..	..	..	36	14	72	10
11	College of Medical Evangelists	C	x	..	x	..	x	x	x	..	x	x	..	..	x	x	..	x	x	..	x	..	x	x	x	..	..	..	..	x	x	x	x	..	x	x	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	18	32	36	11
12	University of Colorado, School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	12
13	Yale Medical School	A+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	13
14	George Washington University, Dept. of Medicine	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	14
15	Georgetown University, School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	15
16	Howard University, School of Medicine	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	x	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	42	8	84	16
17	Atlanta Medical College	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	x	..	..	x	..	..	c	..	..	..	..	..	..	..	..	..	..	41	9	82	17
18	Georgia College of Eclectic Medicine and Surgery	C	x	..	..	..	x	..	x	..	..	..	..	..	x	x	..	x	x	..	x	..	x	x	x	..	..	..	..	x	x	x	x	..	x	x	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	22	28	44	18
19	Southern College of Medicine and Surgery	C	x	..	x	..	x	x	x	..	x	x	..	..	x	x	..	x	x	..	x	..	x	x	x	..	..	..	..	x	x	x	x	..	x	x	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	18	32	36	19
20	University of Georgia, College of Medicine	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	20
21	Bennett Medical College	C[1]	..	..	..	..	a	..	..	..	x	..	..	..	b	b	..	b	..	..	x	..	x	b	..	..	..	..	..	x	x	..	x	..	b	x	..	..	x	x	..	c	..	..	..	..	x	..	..	..	..	..	33	17	66	21
22	Chicago College of Medicine and Surgery	C[1]	..	..	..	..	a	..	..	..	x	..	..	..	b	b	..	b	..	..	x	..	x	b	..	..	..	..	..	x	x	..	x	..	b	x	..	..	x	x	..	c	..	..	..	..	x	..	..	..	..	..	33	17	66	22
23	Chicago Hospital College of Medicine	C	x	..	x	..	x	x	x	..	x	x	..	..	x	x	..	x	x	..	x	..	x	x	x	..	..	..	..	x	x	x	x	..	x	x	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	18	32	36	23
24	Hahnemann Medical College and Hospital, Chicago	B	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	x	x	..	x	..	b	..	..	..	..	x	..	c	..	..	..	..	x	..	..	..	..	..	38	12	76	24
25	Jenner Medical College, Chicago	C	x	..	x	..	x	x	x	..	x	x	..	..	x	x	..	x	x	..	x	..	x	x	x	..	..	..	..	x	x	x	x	..	x	x	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	18	32	36	25
26	Northwestern University Medical School	A+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	26
27	Rush Medical College (University of Chicago)	A+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	27
28	University of Illinois, College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	x	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	48	2	96	28
29	Indiana University, School of Medicine	A+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	29
30	State University of Iowa, College of Medicine	A+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	30
31	State University of Iowa, College of Homeo. Med.	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	31
32	University of Kansas, School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	32
33	University of Louisville, Medical Dept.	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	x	..	..	x	..	..	c	..	..	..	..	..	..	..	..	..	..	41	9	82	33
34	Tulane University School of Medicine	A+	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	34
35	Medical School of Maine	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	35
36	College of Physicians and Surgeons, Baltimore	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	36
37	Johns Hopkins University, Medical Dept.	A+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	37
38	University of Maryland, School of Medicine	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	38
39	Boston University, School of Medicine	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	39
40	College of Physicians and Surgeons, Boston	C	x	..	x	..	x	x	x	..	x	x	..	..	x	x	..	x	x	..	x	..	x	x	x	..	..	..	..	x	x	x	x	..	x	x	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	18	32	36	40
41	Harvard Medical School	A+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	41
42	Tufts College Medical School	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	42
43	Detroit College of Medicine and Surgery	B	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	x	..	..	..	..	b	x	..	..	..	x	..	c	..	..	..	..	x	..	..	..	..	..	39	11	78	43
44	University of Michigan, Dept. of Med. and Surg.	A+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	44
45	University of Michigan, Homeopathic College	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	45
46	University of Minnesota, Medical School	A+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	46
47	University of Mississippi, Medical Dept.*	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	47
48	University of Missouri, School of Medicine*	A+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	48
49	Kansas City Hahnemann Medical College	C	x	..	..	..	x	..	x	..	..	x	..	..	x	x	..	x	x	..	..	..	x	x	x	..	..	..	..	x	x	x	x	..	x	x	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	22	28	44	49
50	Eclectic Medical University, Kansas City	C	x	..	..	..	x	..	x	..	..	x	..	..	x	x	..	x	x	..	x	..	x	x	x	x	..	..	..	x	x	x	x	..	x	x	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	20	30	40	50
51	Ensworth Medical College, St. Joseph	C	x	..	x	..	x	x	x	..	x	x	..	..	x	x	..	x	x	..	x	..	x	x	x	..	..	..	..	x	x	x	x	..	x	x	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	18	32	36	51
52	American Medical College, St. Louis	C	x	..	x	..	x	x	x	..	x	x	..	..	x	x	..	x	x	..	x	..	x	x	x	..	..	..	..	x	x	x	x	..	x	x	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	18	32	36	52
53	St. Louis University, School of Medicine	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	53

54	St. Louis College of Physicians and Surgeons	C	x	..	x	..	x	x	x	..	x	x	..	..	x	x	..	x	x	..	x	..	x	x	x	..	..	..	..	x	x	x	x	..	x	x	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	18	22	36	54
55	Washington University Medical School	A+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	55
56	John A. Creighton Medical College	B	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	x	..	..	..	..	b	x	..	..	..	x	..	c	..	..	..	..	x	..	..	..	..	..	39	11	78	56
57	University of Nebraska, College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	57
58	Cotner Medical College, Eclectic, Lincoln, Neb.	C	x	..	..	..	x	..	x	..	..	x	..	..	x	x	..	x	x	..	x	..	x	x	x	..	..	..	..	x	x	x	x	..	x	..	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	22	28	44	58
59	Dartmouth Medical School†	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	59
60	Albany Medical College	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	x	..	..	c	..	..	..	..	..	..	..	..	..	..	42	8	84	60
61	Columbia University, College of Phys. and Surgs.	A+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	61
62	Cornell University Medical College	A+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	62
63	Fordham University, School of Medicine	A[1]	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	x	..	..	c	..	..	..	..	..	..	..	..	..	..	42	8	84	63
64	Long Island College Hospital	B	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	x	..	..	..	..	b	..	..	..	x	x	..	c	..	..	..	..	x	..	..	..	..	..	39	11	78	64
65	New York Homeopathic Medical College and Hosp.	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	65
66	New York Medical College and Hosp. for Women	C	x	..	..	..	x	..	x	..	..	x	..	..	x	x	..	x	x	..	..	..	x	x	x	..	..	..	..	x	..	x	..	..	x	..	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	25	25	50	66
67	University and Bellevue Hosp. Med. College	A+	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	67
68	Syracuse University, College of Medicine	A+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	68
69	University of Buffalo, Medical Dept.	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	69
70	Leonard Medical School	C	x	..	x	..	x	x	x	..	x	x	..	..	x	x	..	x	x	..	x	..	x	x	x	..	..	..	..	x	x	x	x	..	x	x	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	18	32	36	70
71	University of North Carolina, Medical Dept.*	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	71
72	North Carolina Medical College	C	x	..	x	..	x	x	x	..	x	x	..	..	x	x	..	x	x	..	x	..	x	x	x	..	..	..	..	x	x	x	x	..	x	x	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	18	22	36	72
73	Wake Forest School of Medicine*	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	73
74	University of North Dakota, Medical Dept.*	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	74
75	Cleveland-Pulte Medical College, Homeopathic	C	x	..	..	..	x	..	x	..	..	x	..	..	x	x	..	x	x	..	..	..	x	x	x	..	..	..	..	x	x	x	x	..	x	..	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	23	27	46	75
76	Western Reserve University, School of Medicine	A+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	76
77	Eclectic Medical College	B	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	x	..	..	..	..	b	..	..	..	..	x	..	c	..	..	..	..	x	..	..	..	..	..	40	10	80	77
78	Ohio-Miami Med. Coll. of the Univ. of Cincinnati	A+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	78
79	Starling-Ohio Medical College	A+	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	79
80	Toledo Medical College	C	x	..	x	..	x	x	x	..	x	x	..	..	x	x	..	x	x	..	x	..	x	x	x	..	..	..	..	x	x	x	x	..	x	x	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	18	32	36	80
81	University of Oklahoma, School of Medicine	B	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	x	..	..	..	..	b	x	..	..	..	x	..	c	..	..	..	..	x	..	..	..	..	..	39	11	78	81
82	University of Oregon, Medical Dept.	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	82
83	Hahnemann Medical Coll. and Hosp., Philadelphia	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	83
84	Jefferson Medical College	A+	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	84
85	Medico-Chirurgical College of Philadelphia	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	85
86	Temple University, Medical Dept.	B	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	x	b	..	..	..	..	..	x	x	..	x	..	b	x	..	..	..	x	..	c	..	..	..	..	x	..	..	..	..	..	36	14	72	86
87	University of Pennsylvania, Dept. of Medicine	A+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	87
88	Woman's Medical College of Pennsylvania	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	88
89	University of Pittsburgh, Medical Dept.	A+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	89
90	Medical College of South Carolina	B	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	x	b	..	..	..	..	..	x	x	..	x	..	b	x	..	..	x	x	..	c	..	..	..	..	x	..	..	..	..	..	35	15	70	90
91	University of South Dakota*	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	91
92	Lincoln Memorial University, Medical Dept.	C	x	..	x	..	x	x	x	..	x	x	..	..	x	x	..	x	x	..	x	..	x	x	x	..	..	..	..	x	x	x	x	..	x	x	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	18	32	36	92
93	Meharry Medical College	B[1]	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	x	b	..	..	..	..	..	x	x	..	x	..	b	..	..	..	x	x	..	c	..	..	..	..	x	..	..	..	..	..	36	14	72	93
94	Vanderbilt University, Medical Dept.	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	94
95	University of Tennessee, College of Medicine	B	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	x	b	..	..	..	..	..	x	..	..	..	..	b	x	..	..	x	x	..	c	..	..	..	..	x	..	..	..	..	..	37	13	74	95
96	University of West Tennessee, Medical Dept.	C	x	..	x	..	x	x	x	..	x	x	..	..	x	x	..	x	x	..	x	..	x	x	x	..	..	..	..	x	x	x	x	..	x	x	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	18	32	36	96
97	University of Texas, Dept. of Medicine	A+	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	97
98	Baylor University, College of Medicine	B	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	x	..	..	..	..	b	x	..	..	..	x	..	c	..	..	..	..	x	..	..	..	..	..	39	11	78	98
99	Southern Methodist University, Medical Dept.	B[1]	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	x	b	..	..	..	..	..	x	x	..	x	..	b	x	..	..	x	x	..	c	..	..	..	..	x	..	..	..	..	..	35	15	70	99
100	Texas Christian University, Medical Dept.	B[1]	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	x	b	..	..	..	..	..	x	x	..	x	..	b	x	..	..	x	x	..	c	..	..	..	..	x	..	..	..	..	..	35	15	70	100
101	University of Utah, School of Medicine*	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	101
102	University of Vermont, College of Medicine	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	102
103	Medical College of Virginia	A	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	103
104	University of Virginia, Dept. of Medicine	A+	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	..	..	..	..	..	b	..	..	..	..	..	..	c	..	..	..	..	..	..	..	..	..	..	43	7	86	104
105	West Virginia University, School of Medicine*	B	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	..	b	..	..	..	..	..	x	x	..	x	..	b	..	..	..	..	x	..	c	..	..	..	..	x	..	..	..	..	..	38	12	76	105
106	Marquette University School of Medicine	B	..	..	..	..	a	..	..	..	..	..	..	..	b	b	..	b	..	..	..	..	x	b	..	..	..	..	..	x	..	..	..	..	b	x	..	..	x	x	..	c	..	..	..	..	x	..	..	..	..	..	37	13	74	106
107	University of Wisconsin, College of Medicine*	A+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	....	100	107
	No. of Medical Colleges of which at least some graduates are evidently ineligible for license	......	21	..	14	..	75	14	21	..	16	20	..	..	75	75	..	75	21	..	20	...	36	75	21	1	..	..	..	43	33	21	33	..	75	36	21	..	36	43	21	75	..	21	..	21	43	..	21	21	..	21				
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50				

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* Nine medical colleges give only the first two years of the medical course. Work taken in six of these is apparently fully accepted by all boards for advanced standing in other recognized medical colleges. Work taken in the other three is reported not so recognized in seven states unless the student entered with two years of preliminary college work.

† At the close of the present session Dartmouth Medical College will discontinue teaching the clinical branches.

‡ Third Classification revised to May 10, 1914. (1) Classification changed during present year.

(x) According to official reports the licensing boards of the states thus indicated do not grant full recognition to, or have taken action refusing to admit to their examinations graduates of, the colleges marked by this letter—x.

(a) Colorado registers without further examination only graduates of medical colleges in good standing who present licenses issued after examination granted by other state licensing boards. The law permits any one, graduate or non-graduate, to try the Board's written examination. No graduate, hereafter, will be eligible to license on indorsement of credentials unless he completed two years of collegiate work prior to beginning the study of medicine.

(b) Indiana, Iowa, Minnesota, North Dakota and Kentucky report that no graduate of any medical school may take examinations in those states unless before entering on the study of medicine he or she has completed two years of work in an approved college or university. This rule applies to all graduates hereafter in Iowa, Minnesota and North Dakota. This rule is reported to apply to all graduates of 1915 and thereafter in Indiana, and to all graduates of 1919 and thereafter in Kentucky.

(c) South Dakota reports that no medical college will be considered in good standing which accepts or graduates students who do not have the required preliminary education—two years of collegiate work. This has applied to all colleges since Aug. 1, 1911, and the ruling will affect all graduates of 1915 and thereafter.

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Undoubtedly the less favorable conditions in medical colleges at the time these physicians graduated have some bearing on this result. Justice to such candidates, who have been licensed, but who, for good reasons, desire to change their locations, is the strongest argument for interstate reciprocity in medical licensure, or for special percentage allowances at the examinations for years of practice. The total number of these candidates is diminishing each year as increased reciprocal relations are established. As a rule, the states which do not have reciprocal relations with other states (as Florida, Montana, Massachusetts, Oregon, Washington, see Table L) examined the largest number of old practitioners.

Graduates of 1913 Examined During 1913

Table C also gives the results for the graduates of 1913 who were examined during the year by state boards, and shows that 3,465, or 53.8 per cent. of all candidates examined during the year, graduated in 1913, including ten who graduated in Canada and other foreign colleges. Educational statistics show that the medical colleges of the United States graduated 3,981 students last year; therefore 87 per cent. of all graduates in 1913 took examinations for license during that year. In some of the states, graduates in medicine are allowed to serve hospital internships without first becoming licensed practitioners, which doubtless accounts for some of the remaining 13 per cent. Of those examined, 353, or 10.2 per cent., failed.

TABLE E—COLLEGES GROUPED BY STATES

Showing the Number Examined and Percentage of Failures

All Colleges of	Graduates: Of All Years: Number Examined	Of All Years: Per Cent. Failed	Of 1909 to 1913: Number Examined	Of 1909 to 1913: Per Cent. Failed	Of 1908 & Prev.: Number Examined	Of 1908 & Prev.: Per Cent. Failed	Of 1913: Number Examined	Of 1913: Per Cent. Failed	State Rank According to the Number Examined	Rank According to Successes at Examinations
Alabama	100	26.0	92	25.0	8	87.5	42	33.3	15	26
Arkansas	41	26.9	41	24.4	.....	......	31	19.4	26	28
California	82	19.5	73	15.1	9	55.6	59	8.5	19	22
Colorado	64	0.	62	0.	2	0.	38	0.	21	1
Connecticut	29	6.9	26	7.7	3	0.	3	0.	29	9
Dist. of Columbia	110	12.0	100	9.0	10	30.0	28	3.6	13	15
Georgia	259	23.6	252	23.1	7	42.9	210	16.7	7	25
Illinois	914	10.4	827	10.4	87	10.3	674	6.9	1	13
Indiana	52	3.8	51	2.0	1	100.0	47	0.	21	6
Iowa	33	3.0	26	0.	7	14.3	23	0.	27	3
Kansas	10	0.	9	0.	1	0.	7	0.	32	1
Kentucky	140	21.4	129	16.3	11	45.5	83	4.8	11	24
Louisiana	101	4.9	97	3.1	4	50.0	68	1.5	14	7
Maine	31	16.1	19	15.8	12	16.7	13	15.4	28	10
Maryland	267	17.6	245	17.1	22	22.7	137	9.5	6	21
Massachusetts	251	15.9	224	20.1	27	11.1	123	15.4	8	17
Michigan	114	3.5	89	3.4	25	4.0	72	0.	12	5
Minnesota	62	1.6	55	0.	7	14.3	43	0.	22	2
Missouri	296	16.5	235	13.6	61	60.7	170	8.4	5	20
Nebraska	81	7.4	74	4.1	7	42.9	46	0.	20	10
New Hampshire	18	11.1	15	13.3	3	0.	7	0.	31	14
New York	651	19.9	608	20.2	43	25.6	307	15.3	2	23
North Carolina	95	40.0	90	36.7	5	80.0	64	31.2	16	30
Ohio	198	5.1	191	4.7	7	14.3	172	2.9	9	8
Oklahoma	9	0.	9	0.	.....	......	9	0.	33	1
Oregon	23	8.7	21	9.5	2	0.	7	0.	30	11
Pennsylvania	540	9.4	487	9.2	53	11.3	293	5.4	3	12
South Carolina	49	4.9	46	17.4	3	33.3	30	6.7	25	7
Tennessee	329	30.1	303	27.7	26	57.8	205	18.0	4	29
Texas	95	3.2	93	2.1	2	50.0	78	1.3	17	4
Vermont	61	26.2	58	24.2	3	66.7	30	3.3	23	27
Virginia	144	16.0	128	16.4	16	12.5	95	17.9	10	18
Wisconsin	90	13.3	90	13.3	.....	......	71	5.6	18	16
Totals Ex. in 1913	5339	15.2	4865	14.4	474	23.8	3194	9.5	.....	.....

This table gives data relating to the group of colleges in each state. For example, it shows that, of all the medical schools in New York, 651 graduates of various years were examined by state boards during 1913, and of this number 19.9 per cent. failed. Of the 608 who graduated in recent years, however (1909 to 1913 inclusive), 20.2 per cent. failed; of the 43 who graduated previous to 1909, 25.6 per cent. failed, and of the 307 graduates of 1913, 15.3 per cent. failed.

The ninth column gives the rank of each state group of colleges according to the number of applicants. The Illinois group of colleges leads, having 914 graduates examined by state boards during 1913, followed by New York with 651, Pennsylvania with 540, Tennessee with 329, Missouri with 296 and Maryland with 267.

The tenth column gives the rank of each state group of colleges according to the success of the graduates at the state board examinations. It is interesting to compare the figures of these two last columns. While the Illinois group ranks first according to the number examined [illegible] the success of its graduates at examinations. [illegible] second as to the number examined, it ranks [illegible] ess of its graduates at examinations and while Pennsylvania ranks third as to the number examined, it ranks twelfth in the success of its graduates at examinations.

Results for Larger Colleges

Comparison with Previous Years (Table F)

Year	Colleges Represented	Total Examined	Per Cent. Failed	Colleges, 100 or More Examined	Total Examined	Per Cent. Failed	Colleges, 50 to 100 Examined	Total Examined	Per Cent. Failed	Colleges, Less than 50 Examined	Total Examined	Per Cent. Failed	Foreign, Misc., and Non-grads. Exam'd	Per Cent. Failed
1904	149	6211	16.4	14	2271	11.7	28	1817	16.9	107	2153	21.0	794	43.1
1905	153	6411	18.3	14	2350	12.4	37	2543	17.7	102	1518	28.9	759	51.1
1906	151	6938	17.3	16	2504	11.5	34	2381	16.9	96	2053	21.3	1097	42.5
1907	146	6207	13.8	12	1626	12.7	36	2578	14.7	98	2003	13.6	1064	55.5
1908	137	6491	17.2	19	2596	15.6	26	1825	15.5	92	2070	20.8	1279	14.6
1909	134	6311	16.2	17	2476	16.9	27	1920	12.3	90	1945	19.2	946	42.6
1910	121	5953	15.3	17	2379	13.3	25	1791	13.7	79	1783	19.3	1051	36.5
1911	119	6062	17.2	18	2508	11.0	28	1895	17.1	73	1659	20.1	898	37.6
1912	110	5563	17.1	12	1776	15.6	31	2148	17.3	67	1639	18.5	790	37.0
1913	99	5339	15.2	15	2143	12.6	27	815	37.5	57	1381	17.1	1096	35.2

Total Results

Comparison with Previous Years

Year	Table A: Total Examined	Table A: Examined—Passed	Table A: Examined—Failed	Table A: Percentage Failed	B: Recent Grads. Examined	B: Percentage Failed	C: Older Prac. Examined	C: Percentage Failed	A: Non-Grads. Examined	A: Percentage Failed	K: Registered without Written Examination	Total Registered
1904	7035	5672	1363	19.3	4773	11.1	579	29.7	515	52.6	999	6671
1905	7170	5680	1490	20.8	6051	16.2	650	37.7	472	61.9	394	6074
1906	8035	6368	1667	20.7	6250	16.4	793	27.1	703	51.3	1497	7865
1907	7271	5723	1548	21.3	5922	15.1	675	27.7	674	69.6	1426	7149
1908	7770	6084	1686	21.7	6477	17.8	796	31.5	491	56.8	1276	7360
1909	7287	5857	1430	19.6	5891	15.4	958	30.0	438	54.1	1373	7230
1910	7004	5712	1292	18.4	5678	14.9	973	29.1	353	45.6	1640	7352
1911	6960	5578	1382	19.9	5685	17.2	945	29.4	330	38.5	1246	6824
1912	6879	5466	1413	20.5	5770	18.6	856	29.2	253	34.8	·1257	6723
1913	6135	5236	1100	18.6	5390	16.5	225	32.1	251	37.8	1265	6501

Totals for 1912 include figures for Pennsylvania not published last year.

Table C permits of an interesting study of medical schools from the point of view of state board examinations. For some colleges a marked improvement in teaching methods is apparent from the fact that while the percentages of failures are high for old practitioners, they are lower for recent graduates and still lower for graduates of 1913. Other colleges, however, show no improvement either for recent graduates or for graduates of 1913. In the latter a knowledge of these colleges, based on a careful study, which included inspections of the colleges, bears out what the figures of this table indicate, that some of these institutions are teaching medicine no better to-day than they did ten or more years ago.

Non-Recognition of Medical Colleges

Table D shows for each college the states in which its diplomas are not given unqualified recognition. Non-recognition is expressed by different terms in different states. Some boards list colleges as "in good standing" or "not in good standing," some give them as "reputable" or "not reputable;" in New York, full recognition is given only to colleges which are "registered," and in Michigan colleges are divided into groups, only those of Group I having full recognition. This table also shows the latest rating given to each college by the Council on Medical Education.

The information given in this table is from official correspondence, and the data have been carefully verified. From the point of view of a prospective student who may be selecting a medical college, the facts are simply astounding. The table shows that there are only 31 medical colleges which have complete recognition in all states! If the student has completed two or more years of work in a recognized college or university before he seeks entrance to a medical college, he may take his choice from among 33 other colleges; otherwise he will find that his diploma will not enable him to secure a license in six states. If he gets his medical training in one of the remaining 43 colleges, he will awaken on graduation to the fact that his diploma is not recognized in from 10 to 32 states!

NON-RECOGNITION OF MEDICAL COLLEGES

(Based on Table D)

Not recognized by licensing boards of	Number of Colleges
From 24 to 32 states	21
From 10 to 15 states	22
From 2 to 9 states	33
Fully recognized in all states	31
Total	107

Without the information published in Table D, these state board statistics would be not merely incomplete—they would be actually misleading. For example, in 1912, thirteen graduates of the Eclectic Medical University of Kansas City, Mo., were examined by the Arkansas Eclectic Board of Medical Examiners and all passed. None was examined elsewhere during the year, so the statistics showed no failures for this college during 1912, making it appear to

TABLE F—COLLEGES HAVING FIFTY OR MORE EXAMINED

TABLE SHOWS TOTAL NUMBER EXAMINED, TOTAL NUMBER PASSED, TOTAL NUMBER FAILED, PERCENTAGE OF FAILURES AND NUMBER OF STATES IN WHICH EACH COLLEGE HAD REPRESENTATIVES

COLLEGE	Graduates of All Years					Graduates of 1909-1913					Graduates of 1908 and Previous					Graduates of 1913					Marginal Number
	Number Examined	Number Passed	Number Failed	Per Cent. Failed	No. of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	No. of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	No. of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	No. of States	
Chicago College of Medicine and Surgery	266	220	46	17.3	30	265	210	46	17.4	32	1	1	0	0.	1	205	183	22	10.7	25	22
University of Illinois, College of Medicine	199	186	13	6.5	23	179	168	11	6.2	20	20	18	2	10.0	10	126	123	3	2.4	9	26
Meharry Medical College	158	102	56	35.4	20	143	96	47	32.9	18	15	6	9	60.0	8	96	80	16	16.7	14	87
Jefferson Medical College	154	140	14	9.1	32	137	127	10	7.3	27	17	13	4	23.5	14	84	78	6	7.1	16	79
Rush Medical College	153	151	2	1.3	21	124	123	1	0.4	20	29	28	1	3.4	17	88	88	0	0.	14	27
Columbia University, Coll. of Phys. and Surgs.	147	131	16	10.9	27	127	113	14	11.0	18	20	18	2	10.0	14	70	67	3	4.3	9	59
University of Pennsylvania, Medical Dept.	146	139	7	4.8	25	127	120	7	5.5	22	19	19	0	0.	12	74	72	2	2.7	11	82
University of Louisville, Medical Dept.	140	114	26	21.4	26	129	108	21	16.3	22	11	6	5	45.5	8	83	79	4	4.8	13	32
Atlanta College of Physicians and Surgeons	128	113	15	11.7	10	123	110	13	10.6	10	5	3	2	40.0	4	116	105	11	9.5	9	16
Long Island College Hospital	118	88	30	25.4	7	115	85	30	26.1	5	3	3	0	0.	3	43	35	8	18.6	2	62
Northwestern University Medical School	116	112	4	3.4	20	97	94	3	3.1	16	19	18	1	5.3	10	55	54	1	1.8	5	25
Tufts College Medical School	109	92	17	15.6	13	106	90	16	15.1	12	3	2	1	33.3	3	71	61	10	14.1	6	42
Bennett Medical College	104	90	14	13.5	23	100	86	14	14.0	19	4	4	0	0.	4	62	51	11	17.7	10	21
Johns Hopkins University, Medical Dept.	104	98	6	5.8	23	97	91	6	6.2	22	7	7	0	0.	6	55	53	2	3.6	16	36
Tulane University, Medical Dept.	101	96	5	4.9	13	97	94	3	3.1	11	4	2	2	50.0	3	68	67	1	1.5	8	33
Harvard Medical School	94	87	7	7.4	23	78	72	6	7.7	20	16	15	1	6.3	12	34	31	3	8.8	9	41
University and Bellevue Hosp. Med. College	92	85	7	7.6	10	89	82	7	7.9	7	3	3	0	0.	3	52	48	4	7.7	3	66
American Medical College	90	61	29	32.2	19	63	46	17	27.0	14	27	15	12	44.4	12	43	36	7	16.3	8	47
Marquette University, Medical Dept.	90	78	12	13.3	9	90	78	12	13.3	9	....	....	....	.....	....	71	67	4	5.6	5	53
University of Maryland, School of Medicine	88	66	22	25.0	18	80	61	19	23.7	16	8	5	3	37.5	6	45	41	4	8.9	10	38
St. Louis University, School of Medicine	85	82	3	3.5	17	81	80	1	1.2	15	4	2	2	50.0	4	71	69	2	2.8	11	51
Vanderbilt University, Medical Dept.	80	75	5	6.2	19	76	74	2	2.6	15	4	1	3	75.0	4	54	52	2	3.7	12	90
College of Physicians and Surgeons, Baltimore	74	56	18	24.3	19	67	51	16	23.5	16	7	5	2	28.1	6	36	30	6	16.7	9	37
Albany Medical College	69	48	21	30.4	8	67	46	21	31.3	6	2	2	0	0.	2	32	23	9	28.1	1	58
Medico-Chirurgica [illegible]	69	61	8	11.6	10	63	56	7	11.1	7	6	5	1	16.7	4	33	32	1	3.0	6	80
University of Co[illegible]	64	64	0	0.	11	62	62	0	0.	11	2	2	0	0.	2	38	38	0	0.	5	11
University of Michigan, Coll. of Med. & Surg.	62	60	2	3.2	16	45	44	1	2.2	12	17	16	1	5.9	10	33	33	0	0.	4	44
University of Minnesota, Coll. of Med. & Surg.	62	61	1	1.6	6	55	55	0	0.	4	7	6	1	14.3	5	43	43	0	0.	1	46
[illegible]	62	55	7	11.3	7	62	55	7	11.3	7	....	....	....	.....	....	46	43	3	6.5	3	83
[illegible]	61	45	16	26.2	11	58	43	15	25.8	10	3	2	1	33.3	3	45	31	14	31.1	6	96
[illegible]	61	45	16	26.2	7	58	44	14	24.2	7	3	1	2	66.7	1	30	29	1	3.3	6	95
[illegible]	60	39	21	35.0	10	58	37	21	36.2	8	2	2	0	0.	2	43	29	14	32.[illegible]	7	63
[illegible]	59	48	11	18.6	7	58	48	10	17.1	8	1	0	1	100.0	1	40	37	3	7.5	4	17
Hahnemann Medical Coll. & Hosp., Chicago	59	50	9	15.3	17	46	41	5	10.9	11	13	9	4	30.8	9	28	27	1	3.6	6	23
University of Buffalo, Medical Dept.	58	43	15	25.9	10	52	40	12	23.1	6	6	3	3	50.0	6	25	20	5	20.0	1	67
John A. Creighton Medical College	57	53	4	7.0	11	54	51	3	5.6	9	3	2	1	33.3	3	29	29	0	0.	3	54
University of T[illegible], Medical Dept.	55	39	16	29.1	12	50	35	15	30.0	11	5	4	1	20.0	3	37	29	8	21.6	8	88
Starling-Oh[illegible]	54	53	1	1.9	2	53	52	1	1.9	1	1	1	0	0.	1	53	52	1	1.9	1	73
University [illegible]	54	49	5	9.3	8	52	47	5	10.2	6	2	2	0	0.	2	71	67	4	5.6	5	99
Leonard Medical School	53	25	28	51.9	10	50	24	26	52.9	10	3	1	2	66.7	1	32	16	16	50.0	4	68
Indiana University School of Medicine	52	50	2	3.8	5	51	50	1	2.0	4	1	0	1	100.0	1	47	47	0	0.	1	28
Birmingham Medical College	51	31	20	39.2	7	47	30	17	36.2	6	4	1	3	75.0	2	24	12	12	50.0	3	1
Totals	3958	3381	577	14.5	....	3631	3128	503	13.8	....	327	253	74	22.6	....	2431	2207	224	9.2	..	

This table is especially interesting, since it gives data relating to the 42 larger medical colleges arranged according to the number of graduates examined. This allows of comparison between colleges having classes of nearly equal size. This time the Chicago College of Medicine and Surgery had the largest number, the position having been held by the College of Physicians and Surgeons of Chicago in 1912, 1906 and 1907. In 1908 Jefferson Medical College had the highest number examined. In 1909, 1910 and 1911 the University of Louisville Medical Department had the largest number examined. The first place from the standpoint of the number examined, however, does not always mean first place from the standpoint of scholarship. Note the [illegible].

Of the 15 colleges having 100 or more examined, 7 have [illegible] than 10, while 8 stand out prominently with large failure percentages of 10.9, 11.7, 13.5, 15.6, 17.3, 21.4, 25.4 and 35.4 [illegible] holds for five of the colleges even in respect to recent graduates (of 1909 to 1913 inclusive) as well as for the graduates of 1913. The three highest failure percentages are for Meharry Medical College, 35.4, Long Island College Hospital, 25.4 and the University of Louisville, 21.4.

Of the 27 colleges having between 50 and 100 graduates examined, 11 had failure percentages of less than 10; 5 had failure percentages between 10 and 20, and 11 had failure percentages above 20, the five colleges having the highest failure percentages being Leonard Medical School, 51.9; Birmingham Medical College, 39.2; New York Homeopathic Medical College, 35.0; American Medical College, St. Louis, 32.2, and Albany Medical College, 30.4.

The average percentage of failures for these larger colleges for graduates of 1908 and previous years was 22.6; for graduates of 1909 to 1913 inclusive (recent graduates), 13.8; for graduates of 1913, 9.2, and for graduates of all years, was 14.5. Of the 5,339 graduates of the 99 colleges in the United States which had graduates examined by state boards in 1913, these larger schools furnished 3,958 or 74.1 per cent.

TABLE G—COMPARISON OF RESULTS IN HOME STATES AND ELSEWHERE. BASED ON TABLE B

COLLEGES	Total Examined	Results in Home State			Results in Other States		
		Passed	Failed	Per Cent. Failed	Passed	Failed	Per Cent. Failed
ALABAMA.......................... —28.1	92	46	22	32.3	23	1	4.2
Birmingham Medical College	47	24	17	41.5	6	0	0.
University of Alabama	45	22	5	18.5	17	1	5.6
ARKANSAS.......................... —9.0	41	22	9	29.0	8	2	20.0
University of Arkansas	41	22	9	29.0	8	2	20.0
CALIFORNIA.......................... +26.8	73	59	9	13.2	3	2	40.0
California Eclectic Medical College	7	2	4	6			
College of P. and S., Los Angeles	24	20	1				
Hahnemann Med. Coll. of the Pacific	13	12	1				
Leland Stanford Junior University	7	7	0				
Oakland Coll. of Medicine and Surgery	4	4	0	0.	....	....	.....
College of P. and S., San Francisco	8	4	3	42.9	0	1	100.0
University of California	10	10	0	0.	....	....	.....
COLORADO.......................... —	62	44	0	0.	18	0	0.
University of Colorado	62	44	0	0.	18	0	0.
CONNECTICUT.......................... +2.4	26	14	1	6.7	10	1	9.1
Yale Medical School	26	14	1	6.7	10	1	9.1
DISTRICT OF COLUMBIA.......... +13.0	100	31	0	0.	60	9	13.0
	32	12	0	0.	19	1	5.0
	31	10	0	0.	15	6	28.6
	37	9	0	0.	26	2	7.1
GEORGIA.......................... +39.7	252	142	11	7.2	52	47	47.5
Atlanta College of Phys. and Surgs.	123	83	0	0.	27	13	32.5
Atlanta School of Medicine	58	32	1	3.0	16	9	36.0
Georgia Coll. of Eclectic Med. and Surg.	4	....	....	.....	1	3	75.0
Southern Coll. of Med. and Surg.	26	2	9	81.8	0	15	100.0
University of Georgia	41	25	1	3.8	8	7	46.7
ILLINOIS.......................... —0.9	827	493	59	10.7	248	27	9.8
Bennett Medical College	100	58	10	14.7	28	4	14.3
Chicago College of Med. and Surg.	265	151	29	16.1	68	17	20.0
Hahnemann Medical College and Hosp.	46	24	5	17.2	17	0	0.
Jenner Medical College	16	10	6	[illegible]			
Northwestern University Med. School	97	54	1				
University of Illinois	179	122	8				
Rush Medical College	124	74	0				
INDIANA.......................... +33.3	*51*	*48*	*0*	*0.*	*2*	*1*	*33.3*
Indiana University, School of Medicine	51	48	0	0.	2	1	33.3
IOWA.......................... —	26	24	0	0.			
State Univ. of Iowa, College of Med.	19	17	0	0.			
State Univ. of Iowa, Homeo. Dept.	7	7	0	0.			
KANSAS.......................... —	9	8	0	0.			
University of Kansas, School of Med.	9	8	0	0.			
KENTUCKY.......................... +4.4	129	48	4	7.7			
University of Louisville, Medical Dept.	129	48	4	7.7	60	17	22.1
LOUISIANA.......................... +6.3	97	49	0	0.	45	3	6.3
Tulane University, Medical Dept.	97	49	0	0.	45	3	6.3
MAINE.......................... +15.9	19	10	1	9.1	6	2	25.0
Medical School of Maine	19	10	1	9.1	6	2	25.0
MARYLAND.......................... —1.5	245	62	14	18.4	141	28	16.9
Eastern University	1	....	....	.....	0	1	100.0
Johns Hopkins University	97	28	1	3.4	63	5	7.3
College of Physicians and Surgeons	67	7	4	36.3	44	12	21.4
University of Maryland	80	27	9	25.0	34	10	
MASSACHUSETTS.......................... +6.7	224	113	18	13.7	74	19	
Boston	16	8	1	11.1	7	0	
College	24	2	7	77.8	8	7	46.7
Harvard	78	34	1	2.9	38	5	11.6
Tufts College Medical School	106	69	9	11.5	21	7	25.0
	69	72	0	0.	15	2	11.8
	28	27	0	0.	1	0	0.
	45	32	0	0.	12	1	7.
	16	13	0	0.	2	1	33.
MINNESOTA.......................... —	55	50	0	0.	5	0	0.
University of Minnesota	55	50	0	0.	5	0	0.
MISSOURI.......................... +7.8	235	116	13	10.1	87	19	17.9
American Medical College	63	26	7	21.2	20	10	33.3
Eclectic Medical Univ., Kansas City	13	....	....	.....	10	3	23.1
Ensworth Medical College	13	2	1	33.3	9	1	10.0
Kansas City Hahnemann Med. Col.	10	1	0	0.	9	0	0.
St. Louis University	81	54	0	0.	26	1	3.7
St. Louis Coll. of Phys. and Surgs.	19	6	5	45.5	4	4	50.0
Washington University	36	27	0	0.	9	0	0.
NEBRASKA.......................... [illegible]	74	54	2	3.6	17	1	5.6
	54	37	2	5.1	14	1	6.7
	9	7	0	0.	2	0	0.
	11	10	0	0.	1	0	0.
NEW HAMPSHIRE.......................... —15.9	15	3	1	25.0	10	1	9.1
Dartmouth Medical School	15	3	1	25.0	10	1	9.1
NEW YORK.......................... —15.4	608	386	115	22.9	99	8	7.5
Albany Medical College	67	41	21	33.9	5	0	0.
Columbia Univ., Coll. of P. and S.	127	86	12	12.2	27	2	6.9
Cornell University Medical School	27	20	1	4.8	6	0	0.
Fordham University	28	15	8	34.8	4	1	20.0
Long Island College Hospital	115	77	29	27.4	8	1	11.1
New York Homeo. Med. Coll. and Hosp.	58	18	19	70.4	19	2	6.5
N. Y. Med. Coll. and Hosp. for Women	9	6	2	25.0	1	0	0.
Syracuse University	36	25	6	19.4	5	0	0.
Univ. and Bellevue Hosp. Med. Coll.	89	63	5	7.3	19	2	9.5
University of Buffalo, Med. Dept.	52	35	12	25.5	5	0	0.
NORTH CAROLINA.......................... —1.1	90	29	18	38.3	27	16	37.2
Leonard School of Medicine	50	6	12	66.7	18	14	43.7
North Carolina Medical College	40	23	6	20.7	9	2	18.2
OHIO.......................... +18.7	191	154	2	1.3	28	7	20.0
Cleveland-Pulte Medical College	27	21	1	4.5	4	1	20.0
Eclectic Medical College	35	14	0	0.	16	5	23.8
Ohio-Miami Medical College	31	25	0	0.	5	1	16.7
Starling-Ohio Medical College	53	52	1	1.9	....	....	.....
Toledo Medical College	15	15	0	0.	....	....	.....
	30	27	0	0.	8	0	0.
—	9	9	0	0.	....	....	.....
Med.	9	9	0	0.	....	....	.....
OREGON.......................... —14.3	21	12	2	14.3	7	0	0.
University of Oregon	21	12	2	14.3	7	0	0.
	487	277	23	1.1	165	22	11.8
	35	26	2	7.1	5	2	28.6
	137	54	7	11.5	73	3	3.9
	63	48	4	7.7	8	3	27.3
	25	16	3	15.8	4	2	33.3
	127	69	2	2.8	51	5	8.9
	62	50	4	7.4	5	3	37.5
Woman's Med. Coll. of Pennsylvania	38	14	1	6.7	19	4	17.4
SOUTH CAROLINA.......................... +35.7	46	36	6	14.3	2	2	50.0
Medical College of South Carolina	46	36	6	14.3	2	2	50.0
TENNESSEE.......................... +19.7	303	104	20	16.1	115	64	35.8
Lincoln Memorial University	18	3	8	72.7	5	2	28.6
Meharry Medical College	143	51	3	5.6	45	44	49.4
University of Tennessee	50	19	0	0.	16	15	48.4
University of West Tennessee	16	5	7	58.3	1	3	75.0
Vanderbilt University	76	26	2	7.1	48	0	0.
TEXAS.......................... —2.4	93	83	2	2.4	8	0	0.
	22	19	1	5.0	2	0	0.
	19	14	1	6.7	4	0	0.
	14	14	0	0.	....	....	.....
University of Texas	38	36	0	0.	2	0	0.
VERMONT.......................... +35.9	58	19	0	0.	25	14	35.9
University of Vermont	58	19	0	0.	25	14	35.9
	128	59	14	19.2	48	7	12.7
	58	25	12	32.4	18	3	14.3
	18	3	0	0.	14	1	6.7
	49	31	2	6.1	16	3	18.7
WISCONSIN.......................... +23.1	90	70	8	10.3	8	4	33.3
Marquette University	90	70	8	10.3	8	4	33.3
Totals.......................... +6.8	4865	2746	374	11.9	1420	325	18.6

In this table the graduates of each college who were examined in the state in which the college is located are grouped in one column, while graduates of that college examined in other states are in another column. For example under Massachusetts, this table shows that, of the 24 graduates of College of Physicians and Surgeons of Boston, who were examined by state boards during 1913, 9 were examined in Massachusetts, of which number 2 passed and 7, or 77.8 per cent., failed, while 15 were examined in other states, of which number 8 passed and 7, or 46.7 per cent., failed. This table shows that in the majority of instances the graduates have better chances of passing examinations in the state in which their colleges are located than they have elsewhere. This should always be considered in making comparisons between colleges. A low standard college, by having all its graduates examined in the home state, may sometimes show a lower percentage of failures than a college of much higher grade which has graduates examined by several states.

The heavy-faced figures give the results by states. The first column of heavy-faced figures preceded by the + and — signs, shows the differences between the percentages of examination in the home state and the examinations elsewhere. The plus sign indicates that graduates have better chances of success in the state where the colleges from which they graduated are located; the minus sign indicates that the chances are better elsewhere. The most marked variations in 1913 were in the examination of the graduates of the colleges of Georgia, 39.7 per cent.; Vermont, 35.9; South Carolina, 35.7; Indiana, 33.3; Wisconsin, 28.1, and California, 26.8, in all of which the chances of the graduates were better in the home state. The marked variations where the graduates' chances were better elsewhere were in Alabama, 28.1 per cent.; New Hampshire, 15.9; New York, 15.4 and Oregon, 14.3 per cent. The danger of forming hasty conclusions from these percentages taken alone, however, is very well shown by the figures for Indiana where there is one high grade school, where only 3 graduates were examined in "other states" and where the failure of one of them could have been accidental. More reliable are the percentages in Tennessee, Illinois, Pennsylvania and Missouri where larger number from larger groups of colleges were examined in "other states." The totals show that on the average the chances of success were 6.8 per cent. better if the graduate took the examination in the state where his college was located.

rank among the best teaching institutions in the country. How different the picture, however, when the facts are told that the Eclectic Medical University is not recognized in Missouri, its home state, and that the diplomas are not recognized in twenty-eight states!

There are 32 state licensing boards which are utilizing to some extent, at least, their legal power to refuse recognition to medical colleges which do not meet certain educational standards or which otherwise do not meet the requirements in the respective states. In the other 18 states, either the practice acts do not give the boards the right to enforce a requirement of reasonable standards, or else the boards are apparently not exercising their privileges. It is clearly evident that graduates of low-standard medical colleges which are not eligible for license in 32 states will flock to the other 18 states which have not removed recognition. These 18 states, therefore, will hereafter literally be the dumping-ground of the output of the low-grade medical colleges until needed legal powers are granted to the licensing boards or until those boards take action in the matter.

STUDY OF TOTALS AND PERCENTAGES

A study of totals and percentages as compared with previous years is of interest. The total examined in 1913—6,435—is the lowest number of candidates examined for license in any year since the compiling of these statistics began. The total examined in 1913 shows a decrease of 444 below 1912 and a decrease of just 1,600 below 1906, when 8,035 candidates were examined. Statistics regarding physicians licensed in the various states by reciprocity and by other methods are given in Tables I, J and K. By all methods—examination, reciprocity, under exemption, etc.—6,501 physicians were licensed during 1913, or 222 less than in 1912, and 1,364 less than in 1906, when 7,865 physicians were licensed.

Other deductions from the larger tables have been made and are presented in Tables E to H, which are worthy of careful study.

STUDY OF COLLEGES BY STATE GROUPS

Table E is based on the first three large tables and gives the results for the group of colleges located in each state. It shows what states are furnishing the largest number of physicians, and the failure percentages indicate what kind of training these colleges are furnishing so far as may be judged from the failures of their graduates before state boards. By comparing the percentages of the first column with the other columns it can be seen whether or not there has been any reduction in failures for graduates of recent years. Of the 33 states having medical colleges which grant degrees, 15 furnished 100 or more candidates examined. Of these 15 groups of colleges, 4 had failure percentages of less than 10 per cent.; 7 had failure percentages between 10 and 20, and 4 had over 20 per cent. of failures. The highest failure percentage was obtained by the North Carolina group with 40. Of the states having 100 or more candidates examined, however, the highest failure percentage was obtained by the Tennessee group, which had 30.1 per cent., followed by the Alabama group with 26.0 per cent., and the Georgia group with 23.6 per cent. of their graduates failing. Other deductions are given with the table.

STUDY OF LARGER COLLEGES

Table F is also based on the three large tables and gives the results of state board examinations as they affect the 42 largest medical colleges. Although these colleges represent 42.4 per cent. of the medical colleges in the United States having graduates examined, they furnished 74.1 per cent. of all the candidates for license coming from medical schools of the United States. This table show, however, that the graduation of large classes by a medical college does not prove excellence of teaching, since several colleges having 100 or more examined have very high failure percentages, and this holds true even for the graduates of 1913. In fact, the larger the college from the point of view of the number of students and graduates, the more serious is inferior teaching ability, indicated by a high failure percentage. In fairness to the medical student, and in the interests of the public, such schools should greatly strengthen their teaching facilities or reduce the size of their classes.

Altogether for these schools, 577, or 14.5 per cent., failed, as compared with 17.1 per cent. of failures for the 1,381 candidates from the 57 colleges having less than 50 each examined.

Besides the graduates of the medical colleges of the United States, 1,096 candidates were examined, made up of 58 grad-

TABLE H. PHYSICIANS EXAMINED BY STATE BOARDS, 1909 TO 1913, INCLUSIVE

STATE	1909		1910		1911		1912		1913		Totals			
	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Examined	Registered	Rejected	Percentage Rejected
Alabama	7	20	94	64	107	54	84	72	90	57	649	382	267	41.1
Arizona	19	6	15	0	28	9	32	10	26	0	163	120	43	26.4
Arkansas	111	131	96	28	108	30	124	27	91	28	774	530	244	31.5
California	181	73	104	47	227	59	256	60	163	36	1300	1034	275	21.0
Colorado*	36	15	48	5	33	8	41	1	53	5	245	211	34	13.9
Connecticut	52	13	69	18	73	20	70	18	77	51	461	341	120	26.0
Delaware	19	2	21	2	22	0	22	1	12	1	102	96	6	5.9
Dist. of Columbia	46	21	32	13	25	8	49	7	55	5	261	207	54	20.7
Florida*	70	12	102	15	87	23	114	31	116	49	619	489	130	21.0
Georgia	[illegible]	28	148	9	148	28	178	17	171	24	894	788	106	11.9
				21	41	13	35	12	21	2	272	198	74	27.2
				100	432	154	505	134	367	98	3383	2780	603	17.8
				9	114	7	95	4	101	1	533	500	24	4.5
				4	75	6	131	7	107	4	559	524	35	6.3
				25	56	25	50	12	89	7	471	382	89	18.9
				35	88	30	88	8	78	12	602	493	109	18.1
Louisiana	121	33	101	34	123	30	128	36	69	20	698	545	153	21.9
Maine	55	10	73	5	86	11	74	17	46	9	386	334	52	13.4
Maryland*	130	33	131	32	160	39	160	46	108	40	879	689	190	21.6
Massachusetts*	213	95	197	100	226	74	227	54	215	74	1475	1078	397	26.9
Michigan	140	2	131	3	127	1	159	3	99	3	668	656	12	1.8
Minnesota	90	25	76	22	58	7	55	5	71	4	413	350	63	15.3
Mississippi*	130	154	84	150	115	113	56	48	61	19	930	446	484	52.0
Missouri	[illegible]	70	181	23	182	38	213	32	200	25	1176	988	188	15.9
		[illegible]	73	24	44	19	50	9	57	16	383	292	91	23.8
		8	80	0	67	11	88	10	87	2	427	396	31	7.3
		0	12	1	8	1	8	1	10	3	53	47	6	11.3
New Hampshire	20	10	34	8	18	5	36	7	17	3	158	125	33	20.9
New Jersey	76	12	63	17	107	15	59	14	69	7	439	374	65	14.8
New Mexico	11	4	6	1	2	2	6	2	6	1	41	31	10	24.4
New York	566	72	515	72	536	164	433	153	511	205	3227	2561	666	20.6
North Carolina	111	18	79	15	92	30	87	37	77	34	580	446	134	23.1
North Dakota	41	6	42	5	25	1	15	7	16	13	171	139	32	18.7
Ohio	192	13	172	10	170	8	199	12	189	3	968	922	46	4.7
Oklahoma	92	44	100	42	123	39	94	27	58	5	624	467	157	25.2
Oregon*	95	50	93	55	94	50	96	65	112	36	746	490	256	34.3
		27	451	52	515	27	356	170	345	59	2476	2141	335	13.5
		10	23	10	32	5	39	12	28	4	186	145	41	22.0
		33	61	44	94	27	90	35	99	47	576	390	186	32.3
		21	52	9	53	5	16	1	30	1	248	211	37	14.9
		4	315	52	213	42	313	76	306	94	1692	1424	268	15.9
		19	162	5	151	19	151	13	168	11	880	813	67	7.6
		4	34	4	22	3	20	2	24	3	144	128	16	11.1
		2	21	1	51	1	45	2	24	2	187	179	8	4.3
		40	122	14	115	43	105	30	87	19	711	565	146	20.6
		49	154	43	102	43	69	27	63	22	720	536	184	25.6
		10	88	25	88	22	66	20	58	17	499	405	94	18.8
		13	71	7	107	7	68	19	98	8	454	400	54	11.9
Wyoming	12	0	10	0	8	0	11	0	10	1	52	51	1	1.9
Totals	7287		7004		6960		6879		6435		34565			
Registered	5857		5712		5578		5466		5236		27849			
Rejected	1430		1292		1382		1413		1199		6716			
Per Cent. Rejected	19.6		18.4		19.9		20.5		18.6		19.4			

This table gives the number of candidates registered and rejected by *examination by each state during each of the last five years. The last* four columns give the totals for the five years and the percentage rejected by each state.

Six states registered over 1,000 candidates by examination in the five years, these being California, Illinois, Massachusetts, New York, Pennsylvania and Tennessee. Over 2,000 were registered in only two states, Illinois and New York. Of the 1,424 candidates registered in Tennessee in the last five years, 591 or 41.5 per cent. were non-graduates.

The highest percentages of rejections were 52.0 in Mississippi, followed by Alabama, Oregon, South Carolina and Arkansas, with 41.1, 34.3, 32.3 and 31.5, respectively. The states marked with an asterisk (*) included non-graduates among those examined during the last five years, and for that reason would supposedly have higher percentages rejected. Such, however, was not the case in Tennessee. On the other hand, in several states the boards refuse to recognize certain colleges a eliminate many candidates prior to the examination by a ca scrutiny of credentials and as a result there are lower percentage failures at the examinations.

The lowest failure percentages were in Michigan, 1.8; Wyoming, Vermont, 4.3; Indiana, 4.5; Ohio, 4.7; Delaware, 5.9, and Iowa, 6 uates of Canadian colleges, 89 foreign college graduates, 698 graduates of miscellaneous colleges and 251 non-graduates. Of these 1,096 candidates, 386, or 35.2 per cent., failed.

Results in Home States and Elsewhere

Table G is of much interest, because it shows for each college the results of examinations in the state in which the college is located, as compared with the results of examinations in other states, where there is less possibility of local influence. Of all recent graduates examined in 1913, 2,746, or 56.4 per cent., took their license examinations in the states in which the colleges from which they graduated were located. Of this number 11.9 per cent. failed on the average, whereas, of the 1,420 candidates examined in other states, 18.6 per cent. failed. This would indicate that, as a rule, the student's chances of passing the license examination are better if he stays in the college's home state. In this connection it is interesting to note that no graduate of any of the colleges in the District of Columbia, in Michigan or Vermont failed in the examinations given in those states, although of the graduates of these colleges who were examined in other states, the failures of these groups of colleges were, respectively, 13, 11.8 and 35.9 per cent. There were no failures either at home or in other states for graduates of the colleges of Colorado, Iowa, Kansas or Minnesota. The student's chances for success at home and elsewhere were equal or nearly so in three instances, these being for the colleges of Illinois, Maryland and North Carolina; the student's chances were better in the home state in eighteen instances, while in seven instances the student's chances were better if he went to some other state.

TABLE I—REGISTRATION BY STATE BOARDS DURING THE YEAR 1913

STATES	By Examination			By Reciprocity	Without Written Examination or Under Exemption	Total Registered
	Graduates, 1909-1913	Graduates, 1908 and Previous	Non-graduates			
Alabama	81	9	....	....	....	90
Arizona	14	12	....	....	....	26
Arkansas	72	19	....	51	....	142
California	100	63	....	39	....	202
Colorado	49	3	1	89	....	142
Connecticut	68	9	....	5	....	82
Delaware	11	1	....	9	....	21
District of Columbia	48	7	....	5	....	60
Florida	68	48	....	....	....	116
Georgia	169	2	....	29	....	200
Idaho	9	12	....	4	....	25
Illinois	541	26	....	47	....	614
Indiana	90	11	....	15	....	116
Iowa	97	10	....	32	....	139
Kansas	85	4	....	40	....	129
Kentucky	76	2	....	18	3	99
Louisiana	67	2	....	10	....	79
Maine	39	7	....	7	....	53
Maryland	101	8	....	21	....	130
Massachusetts	171	25	19	....	....	215
Michigan	92	7	....	69	1	169
Minnesota	68	3	....	50	....	121
Mississippi	57	4	....	6	....	67
Missouri	177	23	....	45	....	245
Montana	26	31	....	....	....	57
Nebraska	81	6	....	15	....	102
Nevada	3	7	....	29	....	39
New Hampshire	12	5	....	4	....	21
New Jersey	65	4	....	88	....	157
New Mexico	4	2	....	6	35	47
New York	482	29	....	27	3	541
North Carolina	75	2	....	25	....	102
North Dakota	12	4	....	12	....	28
Ohio	185	4	....	72	....	261
Oklahoma	52	6	....	48	....	106
Oregon	53	43	15	....	....	111
Pennsylvania	331	15	....	20	....	366
Rhode Island	24	4	....	....	....	28
South Carolina	92	7	....	4	....	103
South Dakota	23	7	....	5	....	35
Tennessee	171	14	121	17	....	323
Texas	147	21	....	139	....	307
Utah	20	4	....	8	....	32
Vermont	23	1	....	2	....	26
Virginia	80	7	....	12	....	99
Washington	43	20	....	.	....	63
West Virginia	54	4	....	24	....	82
Wisconsin	95	3	....	68	....	166
Wyoming	6	4	....	7	....	17
Totals	4509	571	156	1223	42	6501

This table shows the total number registered during 1913 in each state by the various methods. The first three columns show those registered by examination; the first column showing the recent graduates registered, the second column, the old pr 1908 and previous years) and the third column. fourth column shows the number licensed fifth column shows those licensed under varic the practice acts, such as because of national of diplomas (New Mexico). It is interesting states which have registered large numbers examined very few old practitioners. The chie which has only recently begun registration under a practice act providing for the recognition of licenses granted in other states. The last column shows the total number of physicians registered by all methods in each state during the year. Only five states registered over 300 each, these being Illinois, 614; New York, 541; Pennsylvania, 366; Tennessee, 323, and Texas, 307.

Total Results for Five Years

Table H shows, so far as reports were obtainable, the number registered and the number rejected in each state for each of the past five years. A comparison of this table with the statistics in the last educational number of The Journal (Aug. 23, 1913, p. 602, Table 12), shows what would be expected, that the states having the largest number of medical graduates examined the largest number of physicians. Now, only one state, New Mexico, will register candidates on presentation of diploma, without examination. This table shows only those registered by examination. The next table (I) shows the total registered by all methods.

Total Registration in 1913

The tables thus far described have referred only to the results of examinations and to those registered on that basis. Table I, however, shows the total number who received licenses in each state, including those registered by examination, by reciprocity and under various exemption clauses. Altogether 6,501 physicians were registered by all methods during 1913, as compared with 6,723 in 1912, 6,824 in 1911, 7,352 in 1910 and 7,865 in 1906. By reciprocity or under exemption clauses, 1,265 were licensed in 1913 as compared with 1,257 in 1912, 1,246 in 1911 and 1,640 in 1910. Over 100 were registered by all methods in twenty-six states, over 200 in ten and over 300 in five, the largest numbers being registered in Illinois with 614, New York with 541, Pennsylvania with 366, Tennessee with 323 and Texas with 307. There were 156 non-graduates registered in five states, 121 (77.5 per cent.) having been registered in Tennessee, 19 in Massachusetts, 15 in Oregon and 1 in Colorado.

Table J gives those registered without examination on presentation of satisfactory credentials, which included a license issued by some other state. This is usually described by the term "reciprocity," which conveys the idea that the state which accepts the license of another must be granted the same courtesy by the state issuing the original license. The term does not well describe this method of registration, however, since some state boards consider it more fair to the physician to accept his credentials, if satisfactory, whether or not the state board issuing the original license returns the favor. In fact, the new practice act of California requires the acceptance of the licenses issued by any state if the *applicant's credentials are otherwise acceptable. Had not* reciprocal relations been established by the 41 states shown *in the table, 1,223 physicians, the majority of whom have been* in practice for many years, would have been compelled to undergo the ordeal of a second trying examination.

Reciprocity and Educational Standards

As formerly administered, reciprocal relations between some states tended to lower rather than to elevate educational standards, and this is still true in some states. A study of these statistics will show that in several instances such relations exist between states differing widely in their standards of education and in the methods and severity of their examinations. It can be seen, therefore, that a loosely administered provision for reciprocity provides a wide-open door through which unqualified candidates can obtain registration. There are some boards, however, which wisely reserve and exercise the right to reject any candidate who does not possess satis-

TABLE J.—PHYSICIANS REGISTERED THROUGH RECIPROCITY BY STATE EXAMINING BOARDS DURING 1913

STATE BOARDS OF	Total Reg. by Recip., Ea. State	Alabama	Arizona	Arkansas	Colorado	Connecticut	Delaware	Dist. of Col.	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	an	ota	ippi	ri	na
Number	....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Arkansas	51	..	..	..	..	..	..	..	..	6	..	4	4	..	..	6	5	..	1	..	..	..	6	..	..
California	39	..	3	..	..	..	..	..	..	..	..	4	..	2	..	..	..	1	5	1	..	..	..	2	..
Colorado	89	2	..	1	..	1	..	2	..	..	..	22	4	6	4	2	1	..	..	1	4	2	..	7	..
Connecticut	5	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Delaware	9	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..
District of Columbia	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Georgia	29	..	..	..	..	..	..	..	..	..	..	..	1	1	..	2	1	1	5	..	2	..	2	1	..
Idaho	[illegible]																								
Illinois	4																								
Indiana	1																								
Iowa	32	..	..	..	[illegible]	..	1	..	..	..	..	..	..	..	[illegible]	..	..	..	[illegible]	..	[illegible]	[illegible]	..	[illegible]	..
Kansas	40	..	..	..	1	..	..	..	..	..	..	5	1	2	..	2	..	..	..	..	..	..	..	15	..
Kentucky	18	..	..	..	1	..	..	..	..	1	..	2	1	..	..	..	..	..	..	..	1	..	..	..	..
Louisiana	10	..	..	..	..	..	..	1	..	..	..	3	..	..	1	1	..	..	1	..	1	..	..	..	..
Maine	7	..	..	..	..	..	..	2	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..
Maryland	21	..	..	..	..	..	1	..	..	4	..	..	..	..	..	..	..	1	..	..	1	1	..	2	..
[illegible]	69	..	..	..	2	..	..	..	..	1	..	21	4	..	1	3	..	..	1	..	..	..	..	1	..
[illegible]	50	..	..	..	..	..	..	..	..	..	..	21	..	7	..	..	..	..	1	..	4	..	..	1	..
[illegible]	6	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Missouri	45	..	..	..	1	..	..	..	..	5	..	9	1	6	10	..	1	..	2	..	..	..	..	..	..
Nebraska	15	..	..	3	..	..	..	..	..	..	..	2	..	4	1	..	..	..	..	..	..	1	..	..	..
Nevada	29	..	..	..	..	..	..	..	..	3	..	4	3	1	1	1	..	..	..	..	..	3	..	1	..
New Hampshire	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
New Jersey	88	..	..		..	..	..	4	..	..	..	2	1	..	..	1	..	3	..	..	..	..	..	..	..
New Mexico	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
New York	27	..	..	..	..	..	4	..	..	..	..	..	1	..	..	..	..	..	..	..	13	..	..	..	..
North Carolina	25	..	..	..	..	..	1	..	1	1	..	..	1	..	..	1	4	..	3	..	..	..	..	..	..
North Dakota	[illegible]											[illegible]									[illegible]	[illegible]			
Ohio																					15				
Oklahoma																					..				
Pennsylvania																					1				
South Carolina	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..
South Dakota	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tennessee	17	..	..	..	..	..	..	..	..	3	..	..	..	..	..	3	..	1	1	..	2	1	[illegible]		
Texas	139	..	..	17	..	..	..	1	..	..	..	23	1	2	3	10	..	1	2	..	3	1			
Utah	8	..	..	..	..	..	..	..	..	..	..	3	..	1	..	..	..	..	..	..	..	..			
Vermont	[illegible]															..	..	1	..	..	..	..		..	..
Virginia																1	..	..	..	..	..	..	..	..	..
West Virginia																3	..	..	3	..	..	..	..	1	..
Wisconsin	68	..	..	1	1	1	..	..	..	..	..	31	1	1	..	3	..	..	2	..	4	10	..	1	..
Wyoming	7	..	..	..	..	..	..	..	..	..	..	2	..	1	1	..	..	..	..	..	..	..	..	..	..
Total	1223	2	3	37	12	2	8	17	1	26	0	171	33	36	32	44	13	9	42	2	66	29	15	61	0
Number	....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

STATE BOARDS OF	ka	a	Hampshire	rsey	Mexico	ork	Carolina	Dakota		oma	n	lvania	Carolina	Dakota	see			nt	ia	ngton	Virginia	nsin	ing	rmy
Number	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Arkansas	1	..	..	..	..	..	..	..	1	11	..	2	..	..	..	2	..	..	..	..	..	2	..	..
California	..	..	..	2	1	4	..	..	1	..	1	5	..	1	..	1	2	..	..	2	..	1	..	..
Colorado	4	..	..	..	3	3	..	..	5	2	1	6	..	..	2	..	1	1	1	..	1	..	..	..
Connecticut	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Delaware	..	..	..	1	..	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	..	..	..	..
District of Columbia	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	2	..	..	..
Georgia	..	..	..	..	..	1	5	..	..	..	..	..	..	..	4	..	..	..	2	..	1	..	..	..
Idaho																	4	..	..	..	..	..	..	..
Illinois																	..	1	..	..	2	8	..	..
Indiana																	..	..	..	..	..	1	..	..
Iowa	[illegible]	..	..	..	[illegible]	..	..	..																
Kansas	5	..	..	..	..	..	..	..																
Kentucky	..	1	..	..	..	..	1	..																
Louisiana	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Maine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	2	..	..	..	..	..	..
Maryland	..	..	..	..	..	..	2	..	2	..	..	..	..	..	1	..	..	..	2	..	3	..	..	..
[illegible]	..	..	1	..	..	9	..	1	9	..	1	4	..	..	1	1	..	1	1	..	2	4	..	..
[illegible]	1	..	..	..	..	..	..	2	1	..	..	1	..	1	..	..	..	..	..	..	..	9	1	..
[illegible]	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	1	..	1	..	..	..
Missouri	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
Nebraska	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	..	..	..	..	..	..	..	..	..
Nevada	1	..	..	..	..	..	..	..	..	1	..	3	..	4	..	..	1	1	..	..	1	..	..	..
New Hampshire	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	1	..	..
New Jersey	..	..	..	..	..	42	..	..	..	..	..	31	..	..	..	..	1	1	..	..	2	..	..	..
New Mexico	..	..	..	..	..	..	..	..	..	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..
New York	..	..	..	6	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
North Carolina	..	..	..	..	..	2	..	..	..	..	..	2	3	..	3	..	..	..	2	..	1	..	..	..
North Dakota														2	..	..	..	..	..	..	..	..	..	..
Ohio														..	..	..	..	..	..	..	8	..	..	..
Oklahoma														..	8	11	..	..	..	..	2	..	..	..
Pennsylvania														..	..	..	..	2	5	..	3	..	..	..
South Carolina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..
South Dakota	3	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tennessee							1			1									[illegible]		1			
Texas																							..	..
Utah																							1	..
Vermont	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
Virginia	..	..	..	..	..	..	2	..	1	..	..	..	..	..	1	..	..	..	..	..	1	1	..	..
West Virginia	..	..	..	..	..	..	1	..	4	..	..	1	..	..	2	..	..	..	5	..	..	..	..	..
Wisconsin	..	1	..	..	..	..	..	1	2	1	..	4	..	..	2	..	..	..	..	..	..	..	1	..
Wyoming	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..
Total	34	4	1	16	8	70	14	6	50	74	3	86	3	10	39	19	12	11	26	2	41	28	4	1
Number	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

This table shows the number of physicians registered by each state through reciprocity during 1913. Reciprocity is not the best term to use, however, since some states, California and Colorado, for instance, register candidates who have satisfactory credentials including licenses, regardless as to whether the states issuing the original licenses reciprocate with them or not. Taking New York as an example, reading from left to right, the table shows that New York registered a total of 27 applicants through reciprocity during 1913, of which number 4 came from Delaware, 1 from Indiana, 13 from Michigan, 6 from New Jersey and 3 from Ohio. Reading from above downward, the table shows that 70 physicians left New York during 1913 and registered in other states under the reciprocity provision, of which number 1 registered in Arkansas, 4 in California, 3 in Colorado, 4 in Connecticut, 1 in Georgia, 9 in Michigan, 42 in New Jersey, 2 in North Carolina, 4 in Ohio and 1 in Utah. Texas leads, having registered 139 physicians through reciprocity in 1913, followed by Colorado, 89; New Jersey, 88; Ohio, 72; Michigan, 69 and Wisconsin, 68. It is interesting to note in what states the original licenses were issued. The table shows that of the 1,223 applicants registered through reciprocity 171, or 14.0 per cent., obtained their original licenses in Illinois and 86, the next largest number, were first registered in Pennsylvania. The states which furnished the next highest numbers were Oklahoma, 74; New York, 70; Michigan, 66; Missouri, 61 and Ohio, 50.

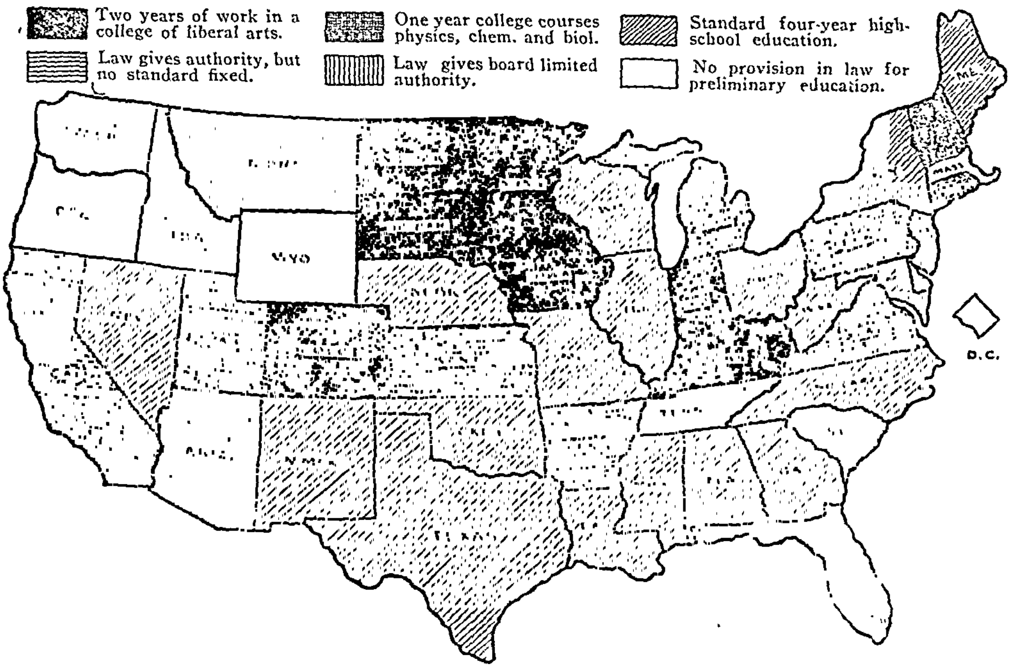
TABLE K—RECIPROCAL REGISTRATION IN FIVE YEARS (SHOWING WHAT STATES ISSUED THE ORIGINAL LICENSES)

STATE	Physicians Going from States Named During					Totals
	1909	1910	1911	1912	1913	
Alabama	2	....	3	1	2	8
Arizona*	2	....	....	....	3	5
Arkansas	1	52	11	15	37	116
California	1	2	1	....	....	4
Colorado	12	13	16	9	12	62
Connecticut*	2	....	....	1	2	5
Delaware	1	6	9	15	8	39
District of Columbia	13	11	23	18	17	82
Florida*	1	1	....	1	1	4
Georgia	10	14	7	13	26	70
Idaho*	1	....	....	5	....	6
Illinois	320	286	236	193	171	1206
Indiana	46	50	37	40	33	206
Iowa	77	84	63	58	36	318
Kansas	41	63	50	27	32	213
Kentucky	30	74	42	36	43	225
Louisiana	2	9	8	10	13	42
Maine	18	15	14	23	9	79
Maryland	25	41	52	48	42	208
Massachusetts*	3	....	2	2	2	9
[illegible]	51	51	69	59	66	296
[illegible]	35	31	29	29	29	153
[illegible]	1	1	3	5	15	25
Missouri	58	91	59	67	61	336
Montana*	....	3	....	1	....	4
Nebraska	53	42	46	29	34	204
Nevada	2	3	2	3	4	14
New Hampshire	8	1	6	1	7	23
New Jersey	29	16	14	18	10	87
New Mexico*	7	1	1	4	8	21
New York	59	224	42	46	70	441
[illegible]	7	7	16	12	14	56
[illegible]	5	8	7	12	6	38
Ohio	47	45	40	39	50	221
Oklahoma	5	21	3	28	74	131
Oregon*	....	....	....	....	3	3
Pennsylvania	7	21	12	57	86	183
[illegible]	1	....	....	....	....	1
[illegible]	7	5	4	5	3	24
[illegible]	1	....	2	1	10	14
Tennessee	21	45	28	51	39	184
Texas	4	23	10	24	19	80
Utah	4	1	2	3	12	22
[illegible]	24	27	36	30	11	128
[illegible]	26	31	28	25	26	136
[illegible]	....	2	7	3	2	14
[illegible]	36	45	45	29	41	196
[illegible]	46	31	41	35	28	181
[illegible]	2	1	2	4	4	13
Alaska	....	..	....	1	1	2
U. S. Army	3	....	....	2	1	6
U. S. P. H. Service	....	2	....	....	....	2
Canada	....	2	....	....	...	2
Foreign and Misc.	10	....	....	3	....	13
Totals	1167	1502	1128	1141	1223	6161

This table shows that 6,161 candidates were registered through reciprocity during the last five years. Registration by reciprocity has been gradually increasing although there was a drop in 1911. A study of the totals for the different states shows that of the 6,161 registered during the four years 1,206, or 19.5 per cent., obtained their original licenses in Illinois. This is more than twice the number coming from any other state. The states furnishing the next highest numbers are New York, 441; Missouri, 336, and Iowa, 318. The states marked with an asterisk (*) do not have reciprocal relations and would not appear in this table except for the fact that some states, like California, Colorado and New Jersey, will accept a physician's credentials if satisfactory, whether the state issuing his original license returns the favor or not.

factory credentials even though he is licensed in a state with which it has reciprocal relations. Some boards also prudently require that the applicant, before he is eligible to registration through reciprocity, must have been engaged in the actual and reputable practice of his profession for at least a year in the state in which the original license was granted. Without this provision a candidate may be tempted to obtain his original license in the state giving the easiest examination. Without the one-year residence clause, therefore, standards of examination are apt to be lowered. Again, some states wisely refuse to register by reciprocity any candidate who has failed to pass their own examinations. In the establishing of reciprocal relations, therefore, the state board should reserve and exercise the discretionary power to refuse to register any candidate who could not originally have registered in that state, and, secondly, the board should require that the applicant shall have been in actual practice of medicine for at least a year before he is eligible to registration under the reciprocity provision.

STATE REQUIREMENTS OF PRELIMINARY EDUCATION


Two years of work in a college of liberal arts.
One year college courses physics, chem. and biol.
Standard four-year high-school education.
Law gives authority, but no standard fixed.
Law gives board limited authority.
No provision in law for preliminary education.
WYO
ME.
D.C.

In the light of the foregoing statement in regard to reciprocity, it will be interesting to study Table K, which shows in what states the original licenses were granted of those who were registered elsewhere under the reciprocity provision during the last five years. It should be noted that of the 6,161 physicians licensed through reciprocity during the last five years, the original licenses of 1,206 (19.6 per cent.) were obtained in Illinois, more than twice as many as came from any other state. In New York 441 physicians took their original license examinations, 336 in Missouri, 318 in Iowa and 296 in Michigan.

The chart shows the standards of preliminary education for each state. There are 7 states, Colorado, Iowa, Indiana, Kentucky, Minnesota, North Dakota and South Dakota, in which the standard is two years of collegiate work; in 11 states the standard is one year of college work; and in 20 states the standard is a four-year high-school education. There are six states in which the law seriously divides the authority between independent boards, or where the standard is less than a four-year high-school education, while in four states, Massachusetts, Oregon, Tennessee, Wyoming and in the District of Columbia, the practice acts make no provision for preliminary education. Table L shows the states in which the boards have adopted the requirement of one or two years of collegiate work as a minimum. It is known that in several other states the adoption of these higher requirements in the near future is contemplated.

In Conclusion

In the publication of these statistics the endeavor has been to give an absolutely fair presentation of facts, a knowledge of which is always beneficial. Without question this annual presentation of the results of state licensing examinations has had a most helpful influence on medical education and medical licensure in this country. We reiterate our acknowledgments to the state licensing boards whose ready cooperation and complete reports have made the publication of these data possible.

TABLE L—STATE REQUIREMENTS OF HIGHER PRELIMINARY EDUCATION

There are now eighteen states which have adopted requirements of preliminary education in addition to a standard four-year high-school education. These states, the number of college years required and the time the higher requirement becomes effective are as follows:

State Examining Board of—	Number of Years Required	Affects Students Matriculating	Affects All Applicants
Minnesota	2	1908-09	1912
North Dakota	2	1908-09	1912
Colorado	2	1910-11	1914
Connecticut	1	1910-11	1914
Kansas	1	1910-11	1914
Indiana	2	1910-11	1914
Utah	1	1910-11	1914
Iowa	2	1911-12	1915
South Dakota	2	1911-12	1915
Vermont	1	1912-13	1916
Kentucky	2	1914-15	1918
Michigan	1	1914-15	1918
New Hampshire	1	1914-15	1918
Pennsylvania	1	1914-15	1918
Rhode Island	1	1914-15	1918
Virginia	1	1914-15	1918
Arkansas	1	1915-16	1919
California	1	1915-16	1919

TABLE M—ADVANCES IN STATE LICENSE REQUIREMENTS IN TEN YEARS

Requirement or provision	States having provision for			States still having no provision for
	1904	1914	Increase	
Preliminary Education—				
Any requirement	20	45	25	4
A standard four-year high school education or higher	10	37	27	12
One or two years of college work as a minimum	0	18	18	31
That all applicants be graduates of a medic[illegible]	36	45	9	4
That all [illegible] ination	45	48	3	1
Requireme[illegible] license examinations	1	7	6	42
Full authority by board to refuse recognition to low-grade colleges	14	33	19	16
Boards refusing to recognize low-grade colleges	5	32	27	17
Reciprocal relations with other states	27	39	12	10
Single boards of medical examiners	36	42	6	7

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SATURDAY, MAY 23, 1914

STATISTICS OF STATE BOARD EXAMINATIONS

We publish this week, for the eleventh consecutive year, tabulated statistics based on examinations conducted by state medical licensing boards. This year, however, the matter presented includes other information having a direct bearing on state boards and on methods of registration. For example, Table D, showing in what states certain colleges are not recognized, although not based on the reports of examinations, has a very important influence on the results of those examinations and is absolutely essential in the forming of an accurate conclusion regarding any state board or any medical college. All the data published, however, are based on official reports, and the figures have been carefully verified, so that reliance may be placed on the facts presented. Reports were received from all state boards this year and the statistics are complete. This is in marked contrast with the statistics of 1903, when the publication of these data began. At that time reports from a large number of boards could not be secured for the reason that no permanent records of the examinations had been kept.

IMPORTANCE OF THESE STATISTICS

The casual reader glancing over the tables will probably not appreciate the conditions which make the publication of these data so important. Medical education and medical licensure in this country are controlled by the forty-nine individual states, each of which in these matters is legally independent of the others. In the forty-nine states there are forty-nine different practice acts, providing for about sixty different licensing boards, no two of which entirely agree in the details of the methods followed or the standards enforced. No legal provision exists in this country for a national control in these matters, for a coordination of standards or for a cooperation between the different boards. This lack of a national control, or of uniformity of standards and of effectiveness of methods, is a very serious matter. In some states the public is well protected against illiterate and incompetent doctors, while in other states, because of poor laws or political boards, the right to practice medicine is easily secured by any person, no matter how incompetent he may be. If a doctor has had his license revoked in one state for malpractice or other reasons, he promptly goes to another state, where he seldom fails to secure a license. If he is caught again, he as promptly transfers his allegiance to a third state. To correct these serious conditions, a greater uniformity of standards and effectiveness of methods was essential among state boards. Toward that end the American Medical Association since 1903 has been voluntarily collecting and publishing information such as appears this week. If there were a national control of the licensing of physicians in the United States, such as exists in practically every other country, it would not be necessary for the American Medical Association to do this work.

The various tables deserve careful attention. A few additional comments are worth while, and the reader is urged to make a further study by referring to the tables and the descriptive matter accompanying them.

FACTS REGARDING EACH STATE

These tables give valuable information regarding medical licensure in each state. For example, Tables A and B show the number of candidates who appeared for examination, the colleges from which they graduated, the number from each college who passed and the number from each who failed, the total number registered, the total number rejected and the percentage of candidates rejected. This table allows of comparison between the totals and the percentages of one state and those of other states. If a state board's examinations are unusually lenient for graduates of medical schools located in that state as compared with the results for the same colleges in other states, the fact will be shown in Table G. To decide whether a low percentage of rejections means "leniency" or not, the reader should note in Table D whether the board has *refused to examine* graduates of low-grade colleges. If the board examines the graduates of only high-grade colleges, a low failure percentage is to be expected. If, on the other hand, a board admits graduates of any and all schools, or perhaps also non-graduates, an unusually high failure percentage would be expected. If in the latter circumstances there is still a low failure percentage, then "leniency" is perhaps too mild a term. The total number of candidates examined, registered and rejected in the last five years by each board and the percentage of rejections are shown in Table H. This permits comparison not only of the figures of the last year with those of the four previous years, but also of the figures of one state with those of the others. Table I shows for each state the totals registered by all methods, by examination, by reciprocity and under exemption clauses. This table also shows the number of non-graduates licensed. Table J shows the number of candidates licensed by each state through reciprocity and shows in what states the original licenses were granted. Table K shows the total number of physicians from each state who, during the last five years, secured licenses elsewhere through reciprocity. Table L gives the eighteen states which have adopted higher standards of preliminary education and the dates when the higher requirements are effective. The preliminary standards of all states are shown in the chart.

FACTS REGARDING EACH COLLEGE

The tables also give much information regarding medical colleges. For example, Tables A and B show in what states graduates of each college were examined; they show the number who passed and the number who failed in each state, the total examined in all states, the number who passed, the number who failed, the percentage of failures and the number of states in which graduates of the college were admitted to examinations. In fact, Tables A, B and C permit a comparative study of medical colleges of much value in connection with any investigation of medical colleges. Table E shows for the group of colleges located in each state the total number of graduates examined in all states, the percentage of failures and the rank of each group according (1) to the number examined and (2) to the success of the graduates at the examinations. Table F furnishes an interesting study of the larger colleges — those having fifty or more graduates examined during the year — and allows of comparison between colleges of nearly equal size. The mere fact that a college has large classes is no indication that it furnishes a better medical training. In fact, the data in Table F show that usually the contrary is true. Before a conclusion is formed regarding any college it is highly important to note in Table D whether or not its graduates are refused examination in any states. A low-grade college may occasionally have a very low percentage of failures by having all its graduates appear before a lenient board. The examination results taken alone would seem to indicate good teaching methods. Such an erroneous conclusion is prevented, however, if it is found, as shown in Table D, that graduates of the college are not admitted to examination in from ten to thirty-two states. A fairly good college may occasionally have a high percentage of failures, especially if they are in states having more rigid examinations. It is seldom, however, that a well-equipped and well-conducted medical college will, year after year, receive as high as 15 or 20 per cent. of failures of its graduates at state licensing examinations. These statistics regarding colleges are very interesting, and throw an important side-light on the classification[1] of medical colleges of the United States prepared by the Council on Medical Education, which is based on an actual inspection of the colleges.

TOTAL REGISTRATION IN ALL STATES

These statistics show for each state the number of candidates coming not only from each medical school in this country, but also from Canadian and other foreign medical colleges. In short, they give an accurate record of the number and source of those who are entering the practice of medicine each year in this country. Without the data published this week, it could not be known that 6,501 physicians were licensed in this country during 1913, and that this included 5,236 who were registered by examination, including 156 non-graduates, 42 who were registered under the various exemption clauses, and 1,223, mostly old practitioners, who were registered under the provision for reciprocity.

STATISTICS ACCURATE AND RELIABLE

The work of collecting and publishing these statistics was begun by The Journal in 1903, but since the Council on Medical Education began active work in 1905, they have been developed as an important part of the Council's work. Every report received from the state licensing boards is now carefully checked, duplications are avoided, errors are corrected and the statistics are thereby rendered accurate and reliable. This is made possible through the enormous amount of data collected by the Council regarding medical colleges, students and graduates. Through the possession by the Council of complete alumni lists of all existing medical colleges, the Council is in position to avoid charging a college with a failure which may have been erroneously accredited to it when, in fact, the candidate who failed was a graduate of some other college.

INFLUENCE ON MEDICAL LICENSURE

These statistics have had a much greater effect, however, than that rendered by a mere numerical record of physicians examined and licensed, and probably no one has recognized their value more than the state licensing boards themselves. As a result, in many states splendid systems of record-keeping are now to be found where formerly, in several states at least, no records whatever were kept, and in several other states the systems were far from perfect. During the last several years, furthermore, they have furnished abundant argument for practical tests in state license examinations and have undoubtedly had much to do with the improved character of these examinations and the better methods of conducting them. A study of the statistics for several years will show that, although there has been a gradual improvement, there is still much that needs to be done.

INFLUENCE ON MEDICAL COLLEGES

The influence on medical colleges resulting from the publication of these statistics has been tremendous. Whereas previously these institutions may have been unaware of the weaknesses in their methods of teaching, these statistics have shown them how frequently their graduates fail at the state license examinations. There has been marked improvement in their equipment, better teachers have been secured and better methods adopted, and it can be seen by a review of the statistics published during the last several years that a number of colleges have materially reduced the failure percentages of their graduates at these examinations.

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[1] The Journal A. M. A., Aug. 23, 1913, p. 585.

COOPERATION MUTUALLY ADVANTAGEOUS

As will be understood by the careful reader, these statistics have their greatest value when studied in connection with other data collected by the Council on Medical Education and published in THE JOURNAL and in the Council's reports. The state board statistics are made more accurate and reliable through the data kindly furnished by medical colleges; they are based on reports received direct from state boards; but through the careful checking of those reports, errors are frequently corrected, the state boards are notified and in this way state records are also made more accurate. The statistics published this week, therefore, have been made possible only through the cordial cooperation of both the state boards and medical colleges, and for this cooperation we again express our acknowledgments.

THE SOURCES OF DANGER IN ANTIMENINGITIS SERUM

Despite the undeniable success which has followed the antiserum treatment of cerebrospinal fever since its introduction as a therapeutic measure in 1906, important contributions that have appeared from time to time in THE JOURNAL[1] must serve to direct attention to the possible sources of danger from the administration of the serum. The papers referred to include reports of alarming symptoms and in a number of instances, death. The untoward results occurred in such close relation to the administration of the treatment that the latter, rather than the disease, seemed to be responsible.

To account for these accidents during the administration of the serum, various explanations have been advanced. Thus, at different times it has been asserted that these deaths were due to rapid lysis of the meningococcus and the consequent liberation of a toxic amount of bacterial toxin; to the production, through the introduction of large amounts of a foreign protein, of anaphylactic shock; to increased intracranial tension, from the too rapid or too free use of the antiserum, and the consequent interference with the vital centers, or to the presence in the serum of poisonous preservatives which were carried directly to the centers of respiration, with a resulting paralysis and death. Among these possible sources of danger, that attributable to sudden increase in intracranial pressure was promptly recognized. Precautions to avoid it are seen in the directions of Flexner and Jobling[2] to make the injection slowly and carefully, and previously to withdraw from the spinal canal at least as much fluid as the amount of antiserum to be injected. Furthermore, Koplik[3] favors the gravity method of introducing the serum rather than the syringe method.

Trikresol has been employed in this country as a preservative of the serum. This has been charged with toxic effects on the patients; but it must be noted that sudden deaths have been reported in cases in which the serum used contained no preservative. Dr. Worth Hale of the staff of the Hygienic Laboratory of the United States Public Health Service has lately undertaken to determine, by experiments on animals,[4] the responsible factors in the deaths from subdural injections of antimeningitis serum. From his studies it would appear that death from the introduction of the fluid may result either from an increase in intracranial tension or from the presence in the serum of trikresol. The danger from trikresol, however, seems much greater and more certain than that which may possibly arise from increased pressure, and on that account an effort should be made to discover a serum preservative which would not have the peculiarly toxic action of trikresol on the central nervous system. Failing in that, antimeningitis serum should be dispensed in sterile containers free from any preservative.

The practical outcome of the governmental investigation is found in the suggestion that blood-pressure observations should be made in every case in which cerebrospinal fluid is withdrawn or serum is introduced into the meninges. By this procedure, warning will be given of any possible danger either from increased intracranial tension or from the poisonous action of any of the serum preservatives. Further, also, it would seem much wiser to discard the syringe method of introducing serum in favor of the gravity method, which permits the use of much greater care and gentleness in making the administration.

As Hale and others have pointed out, the occasional undesirable effect of the serum treatment should not, however, be considered as militating against its regular and invariable use in all cases of the disease, for the dangers which may arise from the treatment are not to be feared in any such way as is the disease itself. The risk, as compared with that from the disease itself, is very small. Therefore too much emphasis cannot be laid on the advisability and importance of the early and free use of antimeningitis serum in all cases of epidemic cerebrospinal meningitis, even though occasionally its administration may be followed by untoward effects. Physicians will be glad to learn that work in developing a suitable preservative for serum is under way in the government laboratories.

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[1] Sophian, A.: A New Method for Controlling the Administration of Serum in Epidemic Meningitis, March 23, 1912, p. 843. Parmelee, A. H.: Epidemic Cerebrospinal Meningitis, March 1, 1913, p. 659. Kramer, S. P.: A Possible Source of Danger in the Use of Antimeningitis Serum, May 3, 1913, p. 1348. Flexner, S.: Accidents Following the Subdural Injection of the Antimeningitis Serum, June 21, 1913, p. 1937.

[2] Flexner and Jobling: Jour. Exper. Med., 1908, x, 141.

[3] Koplik: Med. Rec., New York, 1908, lxxiv, 557.

[4] Hale, W.: The Cause of Death from Subdural Injection of Serum, Bull. 91, Hyg. Lab., U. S. P. H. S., 1914, p. 1.

PELLAGRA AND INFECTION

Any one who reads the current medical literature would be rash, indeed, to look on the problem of the etiology of pellagra as solved in any sense. Those who adhere to the view that corn in the dietary is in some way involved in the production of the disease are in turn divided in opinion as to whether the pathogenetic factor is of the nature of a nutritive deficiency in the corn regimen or is some toxic product developed under unusual conditions by biologic agencies in the cereal before it is eaten. If the zeists are thus uncertain among themselves with respect to the cause of pellagra, no greater accord exists among the not inconsiderable number of thoughtful persons who adhere to the theory of an infectious or microbiotic etiologic agency. Several commissions have already begun an extensive survey of the pellagra situation in this country and an investigation of the possible causative or contributory influences at work. Among the more recent ones the Thompson-McFadden Pellagra Commission of the New York Post-Graduate Medical School and Hospital has already published a preliminary report of its undertaking.[1] In this the following tentative conclusions are reached: The supposition that the ingestion of good or spoiled maize is the essential cause of pellagra is not supported by their study. Pellagra is in all probability a specific infectious disease communicable from person to person by means at present unknown. The commission has discovered no evidence incriminating flies of the genus *Simulium* in the causation of pellagra, except their universal distribution throughout the area studied. If it is distributed by a blood-sucking insect, *Stomoxys calcitrans* would appear to be the most probable carrier. They are inclined to regard intimate association in the household and the contamination of food with the excretions of pellagrins as possible modes of distribution of the disease. No specific cause of pellagra has been recognized.

Further light is shed on the foregoing views by observations recently related by Drs. Siler, Garrison and MacNeal of the commission.[2] A statistical study of the foods used and of the occurrence of pellagra in six mill-villages, including about 5,000 persons, failed to reveal any consistent relationship between the use of any particular food and the occurrence of pellagra. A somewhat similar statistical study of the location of domicile of old cases of pellagra in relation to domicile of the remaining population in these mill-villages has shown that new cases of pellagra developed almost exclusively in persons living in the same house in which such antecedent cases had occurred or in houses next door. In other words, the disease spread from a preceding or antecedent case as a center, a phenomenon which can be explained satisfactorily, in their opinion, only by assuming that pellagra is an infectious disease. Apparently, it is not readily transmitted to any considerable distance.

As was observed in the field studies, pellagra has spread most readily in communities in which unscreened surface-privies were in use. In those portions of the city of Spartanburg, S. C., equipped with a water-carriage system of sewage disposal, new cases of pellagra were relatively few. In two mill-villages completely equipped with a water-carriage sewer system, it was impossible to find cases of pellagra which had certainly originated there. Persons suffering from pellagra contracted elsewhere were not lacking in these communities.

With a further group of investigators from the United States Public Health Service in the field and other agencies at work on the problems of pellagra, it would be premature to issue a final verdict on a subject which has provoked such a diversity of opinion. Hence we merely present to our readers the latest contributions from reliable sources while awaiting that final accord of the findings which characterizes the successful result of scientific research.

SYMPTOMS IN CHRONIC MORPHINISM INDUCED BY WITHDRAWAL OF THE DRUG

Despite the interesting facts which have been developed in the past decade or more concerning the underlying features of chronic morphinism, a number of phenomena have been left unexplained. Our understanding of the remarkable tolerance to the alkaloid exhibited by the addict has especially been promoted by the researches of Faust,[1] who clearly demonstrated that the organism habituated to morphin develops an increasing capacity to destroy it. He found, for example, that after a single injection of this substance in animals, about 70 per cent. of it could be recovered through the usual channels of excretion—the stomach and intestine. With repeated and gradually increasing dosage, on the other hand, the quantity of morphin found in the feces lessens until finally, even when doses lethal to the unaccustomed subject are administered, no morphin whatever may appear in the excretions. Inasmuch as on analysis the organs were found under such circumstances to contain only very small amounts of the

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[1] Siler, J. F., Garrison, P. E., and MacNeal, W. J.: Pellagra, a Summary of the First Progress Report of the Thompson-McFadden Pellagra Commission, The Journal A. M. A., Jan. 3, 1914, p. 8.

[2] Siler, J. F., Garrison, P. E., and MacNeal, W. J.: A Consideration of Certain Foods and of Proximity to a Previous Case as Factors in the Etiology of Pellagra, Proc. Soc. Exper. Biol. and Med., 1914, xi, 94; The Relation of Methods of Disposal of Sewage to the Spread of Pellagra, ibid., p. 94.

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[1] Faust, E. S.: Arch. f. exper. Path. u. Pharmakol., 1900, xliv, 217.

alkaloid, Faust logically concluded that in developing a tolerance to it the organism acquires a capacity to destroy far greater quantities of morphin than it originally possessed.

This cannot completely explain the decreasing sensitiveness of the morphinomaniac to the drug. Even when morphin is subcutaneously administered and thus promptly reaches the blood-stream for distribution the addict is unduly tolerant to large doses. It cannot be assumed that this is due solely to an acquired power of rapid destruction (within a few minutes); for this would mean an almost inconceivably accelerated detoxication of the substance. Rübsamen[2] has observed that rats which are gradually immunized to large quantities of morphin and which can take double the usual lethal dose with impunity, may, at a given moment, show the presence in their bodies of an amount of the alkaloid sufficient in itself to produce toxic effects in an untreated animal of the same species. He therefore assumes that the body develops not only an increased power of destroying this drug, but also a greatly diminished cellular sensitiveness to its action.

Important as these aspects of the continued use of morphin doubtless are for an understanding of the altered physiologic conditions it produces, they furnish no clue to an added feature which must be taken into account in practice. The sudden withdrawal of the drug does not result merely in negative symptoms, but often produces such intense misery and depression as to indicate actual danger. There are positive manifestations which it is difficult to explain solely by the lack of the narcotic, so that something more than the mere staying of the craving appears to be necessary. These after-effects have been attributed variously to the presence of remaining derivatives of morphin which are assumed to be especially toxic.

Perhaps a step toward a final explanation of the depressive symptoms of the withdrawal stage after chronic morphinism is to be found in the recent work of Adriano Valenti[3] at the institute for experimental pharmacology in the University of Pavia. When morphin administration to dogs is stopped after a period of developing immunity, the animals show marked circulatory disturbances—increased frequency of the pulse, severe arhythmias, and arterial hypotension—which promptly disappear if morphin is again administered until the so-called morphin pulse manifests itself. More significant is the fact that when the serum of dogs habituated to large doses of morphin and then suddenly deprived of it is injected into normal animals of the same species, the foregoing syndrome is promptly produced. This is not due to a toxic influence of the serum as such; for the ill effects are not seen when the serum of unmorphinized dogs is introduced. The severity of the symptoms stands in direct relation to the size of the morphin intake to which the donor of the serum has previously been accustomed. Such observations widen the field and open new avenues of approach to the cause of the withdrawal symptoms. Obviously the lack of morphin is not the sole determining factor.

THE SOURCE IN THE FLUIDS IN SYPHILIS OF THE SUBSTANCES WHICH GIVE THE WASSERMANN REACTION

The source and the nature of the substances in the blood and other fluids of syphilitics on which the Wassermann reaction depends are not determined. At first they were regarded as true antibodies, but when it became known that specific antigen (extract of congenitally luetic liver) is not essential in order to obtain the reaction, and that the *Spirochaeta pallida* cannot be used successfully as antigen in the reaction, there no longer was any good reason for regarding the reacting substances in syphilitic fluids as of necessity being antibodies.

To obtain some clue as to the source of these substances, Wassermann and Lange[1] have made some very interesting experiments with the cerebrospinal fluid of syphilitics. They selected this fluid for their work because it is much less complex in its composition than the blood-serum and consequently less liable to undergo physicochemical changes that may give rise to misleading results. Thus the action of cerebrospinal fluid which gives the Wassermann reaction remains constant for a much longer time than in the case of serum. Wassermann and Lange find by accurate quantitative determinations that one source at least of the reacting substances is the lymphocytes in the fluid. It will be recalled that when the cerebrospinal fluid gives the Wassermann reaction it invariably contains an increased number of these cells, and it was found that autolysis of the lymphocytes in positive cerebrospinal fluid from syphilitics in most cases would result in an increase, sometimes very marked, in the power of the fluid to fix complement in the presence of extracts of syphilitic liver. This increase could not be obtained by autolysis of the cells in other cellular cerebrospinal fluids (those from non-syphilitic meningitis, alcoholic dementia) than those from syphilitics; hence it would seem that the lymphocyte, which is a prominent element in all syphilitic lesions, constitutes a laboratory for the manufacture of the substances necessary for the Wassermann reaction.

Whether these substances are antibodies still remains an open question concerning which Wassermann and Lange indicate that they may have something to say before long.

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[2] Rübsamen: Arch. f. exper. Path. u. Pharmakol., 1908, lix, 227.

[3] Valenti, A.: Experimentelle Untersuchungen über den chronischen Morphinismus; [illegible] en durch das Serum morphinistischer [illegible] Erste Mitteilung, Arch. f. exper Path.

[1] Wassermann, A. von, and Lange, C.: Zur Frage des Entstehens der Reaktionsprodukte bei der Serodiagnostik auf Lues, Berl. klin. Wchnschr., March 16, 1914, p. 527.

Current Comment

PROSPECTIVE MEDICAL STUDENTS AND LOW-GRADE MEDICAL COLLEGES

One of the tables published this week[1] (Table D) shows the states in which the diplomas from certain colleges are not given unqualified recognition. The table indicates that in from fourteen to thirty-two states the diplomas issued by thirty medical schools are not recognized, and that in these states the graduates of these thirty schools are not admitted to the examinations for licenses to practice medicine. It is highly important that this information should receive wide publicity, particularly in the interests of prospective medical students. Before selecting a medical school the student should know whether the training furnished and the diploma given by that school will qualify him for examination and for a license to practice medicine in any state he may choose. This information, that is, the fact that recognition has been withdrawn or withheld from certain medical colleges, is not always given publicity by state boards and, of course, is not published in the announcements of the colleges affected. Some students, therefore, have not been aware of the conditions until they had matriculated, or even until the time they had applied for a license to practice. Hundreds of students, in fact, have enrolled in low-grade medical colleges, have spent large sums of money, and have devoted three or four years to study, or have graduated before they learned these facts: not only that they have not received a training in modern medicine, but also in in many instances have received diplomas which in a large number of states are worthless. This is positively wrong and places a life-long handicap on these students. The important information regarding the non-recognition of low-grade medical colleges by state boards should be in the hands of every prospective medical student when he chooses his college. This knowledge will enable him to avoid the serious mistake of making a bad start on his life's work. The intelligent student, thus informed, would certainly not waste his time and money in a low-grade institution when, in the same time and with perhaps even less money he could obtain a training in a thoroughly well-conducted medical school which would not only better equip him for his profession, but would also enable him to render better service to the people who will depend on him for medical attention or hygienic instruction.

THE PUBLIC AND LOW-GRADE MEDICAL COLLEGES

The information published in Table D is especially of importance to the public: it indicates the states that are not adequately protected against untrained doctors. The table shows that the boards of thirty-one states are making use of the legal power conferred on them to discriminate between medical colleges and to refuse recognition to those which are of low standard or are not properly equipped to furnish their students a satisfactory training in modern medicine. Of the thirty-one state boards, seven[1] will not license the graduate of any medical college unless he had completed at least two years of work in an approved liberal arts college before taking up the study of medicine. There remain eighteen states in some of which the boards do not have legal authority to pass on the character or standing of the colleges whose graduates may be admitted to examination. In other states the boards are apparently given ample powers, but, so far as our information shows, are not using those powers. It is important to note, that since the graduates of these low-grade medical colleges cannot secure licenses in thirty-one states they will flock to those in which they are still eligible. These eighteen states, therefore, are certain to be the dumping-ground for the output of these inferior colleges just so long as the practice acts permit, or so long as the state licensing boards do not take action against them. The people have the right to expect that the state — on which the national constitution places the responsibility — will grant them proper legislation, and that the licensing board — the only legal body having these matters in charge — will take such action as is necessary to protect them against the ill-trained product of low-grade medical colleges.

STREPTOTRICHAL ORGANISMS IN THE SPLEEN IN CERTAIN CASES OF SPLENOMEGALY

Certain cases of splenomegaly, especially those which Osler classifies under the term of "splenic anemia," have many features suggestive of parasitic infection. The semblance to kala-azar and the beneficial effects following splenectomy and the administration of such remedies as salvarsan have frequently been noted, but thus far no specific etiologic factor has been determined. In an exhaustive study of the spleens from six patients A. G. Gibbons[2] found evidences of a streptothrix invasion in such relation to the tissues as to suggest this as the cause of the enlargement and fibrosis. These cases fall into two groups, four in the first group and two in the second, suggesting that there might be two different varieties. In a typical case of Banti's disease representing the first group in which special attempts were made to find parasites, the spleen was greatly enlarged and its capsule irregularly thickened. Small recent infarcts were present. Throughout the spleen were areas with branches of yellowish but not calcified material. After staining by Wheal and Chown's method, which, briefly, is a double stain, first by hematoxylin, then by carbol-fuchsin, the decolorization being effected by equal parts of alcohol and saturated watery picric acid, black masses appeared in the trabeculae close to the veins, corresponding to the yellow areas of the fresh specimen. Under high power these masses consisted of numerous threads, and individual fibers averaging

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[1] Page 1650.

[1] These states are Colorado, Iowa, Indiana, Kentucky, Minnesota, North Dakota and South Dakota.

[2] Gibbons, A. G.: On the Infective Nature of Certain Cases of Splenomegaly and Banti's Disease, Quart. Jour. Med., January, 1914, p. 153.

0.25 micron in thickness were seen only at the edges of the masses. The threads appeared segmented, in some places assuming a bacillary form with rounded ends; in other places where the threads were thicker and had undergone hyaline changes they were granular. A noticeable feature was the constancy with which the black masses were associated with the vessels. In some cases the walls were invaded and a beginning thrombosis was present, but the masses never penetrated into the lumen. The veins not affected were fibrous, suggesting a healed focus of previous invasion. In the second group of cases, stained sections showed a brilliant-red fine mycelium-like network occurring in round or oval masses. These masses formed a network of branches and threads varying in thickness and presenting different pictures, some ending in bulbous club-shaped extremities, others, separated from the network, appearing as cocci and short bacilli. By various stains the possibility that some tissue structures had simulated the parasites was eliminated. The masses were Gram-negative and were not acid-fast. Cultures were made on agar and blood-agar from the splenic pulp in only one case but without any results, the other spleens having been preserved some time before they were examined. These observations are hopeful as indicating progress in our knowledge of the conditions associated with splenomegaly; further evidence, however, must be obtained before definite conclusions can be drawn.

VARIATIONS IN THE PATHOGENIC AND OTHER CHARACTERISTICS OF SPIROCHAETA PALLIDA

Knowledge of the morphology and pathogenic characteristics of *Spirochaeta pallida* has reached the stage at which observers are attempting to classify distinct strains, the differentiation of which depends on definite variations in form, pathogenic power, virulence, etc. Noguchi[1] describes three types of the organism: the thick, thin and medium forms. Nichols[2] reviews the observations of others and contributes a study of a type of organism frequently found in syphilis of the central nervous system. The strain studied was isolated from the cerebrospinal fluid of a patient with nervous syphilis, and conformed to Noguchi's thick type in form. It produced in the testicles of rabbits a distinct lesion with raised indurated margins and necrotic centers, and localized constantly on the scrotal side of the tunica vaginalis. The incubation period averaged eighteen days, while that of the corresponding type of Noguchi averaged five weeks. What Nichols considers the most striking differential feature in this strain is its tendency to generalize, with lesions of the skin, eye and opposite testicle secondary to the inoculation lesion in the one testicle. These observations lead the author to conclude that he is dealing with a peculiar strain whose chief characteristic is its "invasive power" or what is described by others as high virulence and selective preference for certain tissues. He cites *Spirochaeta pertenuis* as an example of an organism of low invasive power. This organism produces yaws, which is a non-venereal, non-hereditary skin disease, and is not known to invade other tissues. For this reason Nichols suggests a classification with the *S. pertenuis* at one extreme, and the highly invasive strain isolated by him at the opposite extreme of the series, other strains occupying intermediate positions according to their characteristics. We have recently commented[3] on variations in the cultural, morphologic and pathogenic properties of certain bacteria, as observed by different workers, and it would seem that the same biologic principles there suggested might apply to organisms of the syphilis group, namely, that organisms of a given species may vary in their characteristics according to their environment either *in vitro* or *in vivo*, and with this variation may exercise a selective preference for different tissues and manifest varying grades of pathogenic power.

EFFECT OF THE VANDERBILT DECISION ON MEDICAL EDUCATION IN THE SOUTH

The Supreme Court has recently decided that the board of trustees of Vanderbilt University, and not the General Conference of the Methodist Church, has the authority to select those who are to fill vacancies on that board. As a result of this decision the medical department of Vanderbilt University has secured the gift of one million dollars offered about a year ago[4] by Mr. Carnegie, and this, in turn, permits a continuation of the remarkable development already well begun in that school whereby it will continue to hold its place among the best medical schools in this country. Vanderbilt University Medical Department has had a long and difficult fight to uphold fair standards of preliminary and medical education against perhaps more numerous and embarrassing handicaps than have confronted any other medical school, and for that reason its recent good fortune is all the more gratifying. Even though it is located in the state which at present has the weakest legal requirements regulating the practice of medicine, it is now in position not only to maintain high standards in medical education in that state, but also, in the administration of its entrance standards, to exert a splendid influence in general education throughout the entire South.

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[1] Noguchi: Jour. Exper. Med., 1912, xv, 201.

[2] Nichols, H. J.: A Strain of Spirochaeta Pallida Isolated from the Nervous System, Jour. Exper. Med., April 1, 1914, p. 362.

[3] Transmutations in Bacterial Species, editorial, The Journal A. M. A., March 28, 1914, p. 1021.

[4] A Million Dollars for Medical Education, Current Comment, The Journal A. M. A., June 7, 1913, p. 1801.

Prevention of Drunkenness.—As long as intoxicating liquors or other intoxicating drugs are accessible to persons who are mentally defective, to persons of weak will, or to persons of normal mentality who suffer marked physical discomfort or pain because of overwork, undernourishment, unemployment, illness, or domestic and business worries, there is likelihood that any use of alcohol will lead to its abuse. In so far, therefore, as evil heredity, bad housing conditions, long hours of labor, poverty and other predisposing causes can be reduced gradually through preventive legislation, the sources of inebriety of the pathologic type will be correspondingly diminished.—Report of Commission to Investigate Drunkenness in Massachusetts.

Medical News

ARIZONA

Personal.—Dr. Guillermo R. Servin, Tucson, has been appointed consul of the Republic of Mexico at Mexicali, Cal.

State Health Officers Elect.—At the third annual meeting of the Arizona Association of State and County Health Officers held in Tucson, April 24. Dr. George D. Troutman, Tucson, was elected president, Dr. Henry A. Hughes, Phoenix, vice-president, and Dr. Robert N. Looney, Prescott, secretary.

CALIFORNIA

Austrian Surgeon at Riverside.—At the annual meeting of the Southern California Medical Society, held at Riverside, May 7 and 8, Dr. Egon Renzi, Vienna, Austria, delivered an address on "Extirpation of the Spleen for Anemia."

The Foresters Sanatorium.—Among the sanatoriums established in the West by various benevolent and secret orders for the care of their members afflicted with tuberculosis, is that of the Foresters recently erected in Lopez Canyon near San Fernando, about 25 miles from Los Angeles. Dr. Clarence B. Dickson, Los Angeles, chief ranger of the order in California, has donated his services as physician for the first two years. The sanatorium has quarters for about fifty patients, and is arranged on the cottage plan, with separate living quarters for nurses, with power plant, dairy, etc.

CONNECTICUT

New Officers.—Litchfield County Medical Association at Winsted, April 28: president, Dr. Elias Pratt, Torrington; secretary, Dr. C. H. Turkington, Litchfield.

Board of Health Appointments.—The following roster of the New Britain Board of Health is announced: Drs. Arvid Anderson, George H. Bodley and Henry T. Bray; Messrs. M. W. Davenport, Herbert S. Tallard and Timothy E. Burns. Dr. Thomas E. Reeks has been appointed health officer of the city.

State Epileptic Colony Opened—The Connecticut Colony for Epileptics at Mansfield opened for the reception of patients May 15. The colony is located on a tract of land 500 acres in extent on the summit of a slope overlooking the Willimantic River, and will have accommodation for eighty patients and the necessary attendants and workmen. Dr. Donald L. Ross has been in charge of the construction, and will be superintendent of the institution. Dr. Max Mailhouse, New Haven, is president, and Dr. John H. Mountain, Middletown, vice-president of the board of trustees of the institution.

ILLINOIS

New Clinical Laboratory.—The Illinois Valley Clinical Laboratory has been established at Ottawa under the supervision of Dr. Roswell T. Pettit, with J. B. Gookin, formerly of Chicago, as chemist and bacteriologist.

Consulting Staff for State Hospital.—Superintendent H. J. Gahagan of the Elgin State Hospital has appointed the following complementary medical staff: eye, ear, nose and throat, Dr. John R. Tobin; gynecology, Dr. Frederick C. Schurmeier; internal medicine, Dr. John F. Bell; dermatology, Dr. Edward H. Abbott, and pathology and bacteriology, Dr. Samuel L. Gabby.

Personal.—Dr. Oscar B. Edmundson, Clinton, has purchased an interest in the Sulphur Springs Sanitarium, Peoria. ——Dr. James A. Rutledge, Woodmen, Colo., formerly of Elgin, has been elected state consul for the Colorado Woodmen of America.——Dr. A. M. Shaw has been appointed health commissioner of Clearing, and Dr. Orlando F. Scott, health commissioner of the villages of Summit, Argo, Justice and Gary.

Expense of State Charitable Institutions.—According to the statement of Frank D. Whipp, fiscal supervisor, State Board of Administration, the total expense of caring for the 20,000 inmates of the various state institutions for the year ended June 30, 1913, was $4,445,815.93. Of this amount $3,395,012.40 was for ordinary operating expenses, and $1,050,803,53 was for the upkeep of buildings and plants, the erection of new buildings and for permanent improvements. The largest item was for salaries, $1,492,853.75, which includes the wages of all employees. For medical supplies the sum expended was $46,041.11. After deducting amounts paid to the state by relatives of inmates for support, sale of farm products and other income not from the state treasury, the average net per capita cost of maintenance of the inmates of all classes of institutions was $158.37. The average net per capita cost of maintaining the insane was $142.24; feeble-minded, $156.09; deaf, $314.15; blind, $308.09; industrial home for the blind, $303.56; Soldiers' Home, $157.87; Soldiers' Widows' Home, $373.32; Soldiers' Orphans' Home, $261.56; Eye and Ear Infirmary, $273.77; school for girls, $199.30, and for inmates of the boys' school, $258.05.

Chicago

Personal.—Dr. and Mrs. Arthur W. Stillians sailed for Europe, April 25.——Dr. Otto L. Schmidt was reelected president of the Illinois State Historical Society at its meeting in Springfield, May 8.——Dr. Julia D. Merrill died May 17. Further notice will appear next week.

Infant Welfare Fund.—Great progress is being made in the collection of funds by the organizations interested in the infant welfare movement. One forenoon's work brought $4,513.70 to the association. Mr. Julius Rosenwald has promised to add 25 per cent. of the total sum collected. The campaign will end May 23d, when a complete report will be made.

Pathological Society Elects.—At its annual meeting, May 11, the Chicago Pathological Society elected the following officers: president, Dr. Ernest E. Irons; vice-president, Dr. L. E. Day; secretary, George H. Weaver; treasurer, Alexander A. Goldsmith; censors, Drs. Evarts A. Graham, Walter W. Hamburger and Frederick R. Zeit; and publication committee, Drs. Ludvig Hektoen, H. Gideon Wells and Frederick R. Zeit.

Clean-Up Week.—The Chicago *Health Bulletin* in commenting on the annual clean-up week, through which Chicago has just passed, says that the good feature about it is that it inculcates not only the clean-up spirit, but the keep-clean spirit, and this is the spirit that counts. In this connection it is suggested that as one means of keeping the back yard in good condition, there should be enough gardens in Chicago to supply thousands of tables with fresh vegetables.

Nurses' Training School Renews Contract.—The county board has refused to pay for $8,400 worth of nursing service supplied this year to the sick and injured in the county hospital. The service was supplied by the Illinois Training school. The board has renewed its contract with the school. A plan will be devised for financing the nursing until the county commissioners decide to pay and an appeal to the public for subscriptions is probable. The contract awarded provides the school shall have $45.85 a nurse actually employed.

Deaths from Accident During 1913.—Falls were the source of the greatest number of deaths from accident in Chicago last year, according to figures compiled by the Health Department. The total number of deaths from accident was 1,925. The chief causes were as follows: falls, 333; burns, exclusive of those caused by blazes in buildings, 291; railway accidents (steam), 271, street, 157; illuminating gas, 133; drowning, 122; automobiles, 121; poisoning, 42; electricity, lightning excepted, 24; due to machinery, 62. Of the 216 homicides reported during the year 135 were caused by firearms and 27 by stabbing or cutting. There also were 497 cases of suicide investigated by the coroner's office.

Good Housing Organization Formed.—Incorporation papers were taken out May 19 for the Chicago Housing Association. The first meeting of the new association will be held May 21, when a dinner will be given for Robert W. de Forest of the Russell Sage Foundation, president of the Housing Association of the United States.

The speakers will be Mr. de Forest, Mrs. Emmons Blaine, Dr. Charles R. Henderson, Dr. W. A. Evans, Miss Jane Addams, Miss Mary McDowell and others.

The association was formed of the housing committees working toward better housing conditions in Chicago of all organizations. The object was to get one organization with a concentrated effort, eliminating all duplication. The Chicago Association of Commerce, the City Club, the Woman's City Club, the Chicago Woman's Club and other civic organizations are represented in the board of directors of the association.

Clean Water Bill Offered for Protection of Chicago.—It is likely that pollution of the water-supply of Chicago and other lake cities by the sewage discharged from vessels will be prohibited in the near future. A bill, approved by the United States Public Health Service, was introduced in the House of Representatives, May 19, by Representative Mann of Illinois.

The bill provides: That no common carrier operating vessels, craft, or other vehicles or structures for the purpose of navigation shall discharge or cause to be discharged sewage or any other noxious material into the waters of the great lakes so as to pollute water-supplies of cities or towns or of other vessels plying on the great lakes; that no common carrier operating on the great lakes shall provide on steam vessels for the use of their crews and passengers water-supplies containing organisms or materials likely to cause disease of man.

For violation of the law an offender may be fined not more than $500 or imprisoned for not more than two years, or given both penalties.

IOWA

Personal.—Dr. George H. Stanger, Boone, who has been seriously ill, is improving and has resumed practice.——Dr. Cora Williams Choate has been elected president of the library board of Marshalltown.

New Officers.—Tama County Medical Society at Toledo, May 1: president, Dr. Albert A. Crabbe, Traer; secretary-treasurer, Dr. Frederick W. Gessner, Dysart.——Clayton County Medical Society at McGregor. April 29: president, Dr. Charles W. Duffin, Guttenberg; secretary-treasurer, Dr. William H. Thomas, McGregor.——Crawford County Medical Society at Denison, April 20: vice-president, Dr. William A. Garner, Kiron.——Harrison County Medical Association at Logan, May 7: president, Dr. John L. Tamisiea, Missouri Valley; secretary, Dr. H. Hansen, Logan.——Fremont County Medical Society, April 30, at Sidney: president, Dr. Theodore C. Harris, Tabor; secretary-treasurer, Dr. Ambrose E. Wanamaker, Hamburg.

KANSAS

New Officers.—Seventh District Medical Association at Hutchinson, April 24: president, Dr. William F. Fee, Meade; secretary-treasurer, Dr. William F. Schohr, Hutchinson.

Joint Meeting of Societies.—The joint meeting of the McPerson and Salina Counties Medical Societies held at Lindsburg, April 22, was so successful that it was voted to hold joint meetings every two months in that city.

Personal.—Dr. John De M. Miller, Leavenworth, returned from Europe, May 3.——Fire at Richmond, April 29, destroyed the office of Dr. Delmar H. Smith.——Dr. Lewis A. Ryder, Topeka, has been reelected medical director of the Home Mutual Life Insurance Company.

State Society Meeting.—At the annual meeting of the Kansas Medical Society, held in Wichita, May 5-7, the following officers were elected: president, Dr. William F. Sawhill, Concordia; vice-presidents, Drs. Jacob F. Gsell, Wichita; John F. Hassig, Kansas City, and Jacob L. Everhardy, Leavenworth; secretary, Dr. Charles F. Huffman, Columbus (reelected), and treasurer, Dr. Lewis H. Munn, Topeka (reelected). The society adopted a resolution asking the governor to appoint a commission to prepare a bill to be brought before the next legislature, defining the practice of medicine, and the requirement for practicing "the art of treatment of disease." Kansas City was selected as the place of meeting for 1915.

MARYLAND

Medal to Dr. Remsen.—Dr. Ira Remsen, formerly president of Johns Hopkins University and chairman of the Remsen Referee Board, was given a banquet by the Chicago section of the American Chemical Society, May 15, at which he was presented with the Willard Gibbs medal. This is the fourth award of the medal, and the third time it has been awarded to an American chemist. The presentation address was by Professor Noyes of the University of Illinois, and Dr. Remsen, in his response, spoke on "The Development of Chemical Research in America."

Physicians' Jubilee.—The Carroll County Medical Society gave a dinner on May 13 in honor of four of its members who have been in active practice for fifty years—Drs. George H. Brown, New Windsor; James H. Billingslea, Westminster; James Watt, Union Bridge, and John F. B. Weaver, Manchester. The first three of these physicians are graduates of the Maryland University, class of 1864. Dr. Daniel E. Stone of Mt. Pleasant, Frederick County, of the same class, was also present. Dr. Daniel B. Sprecher, Sykesville, president of the society, presided and acted as toastmaster.

Convention of Societies for Mental Hygiene.—The first convention of the societies for mental hygiene to be held under the auspices of the National Committee for Mental Hygiene will take place in Baltimore, May 25. The opening address will be delivered by Dr. Lewellys F. Barker, President of the National Committee for Mental Hygiene. Miss Julia Lathrop, Chief of the Children's Bureau, will speak on "What the Mental Hygiene Societies Ought to Do for Children." Hon. George P. McLean, U. S. Senator from Connecticut, will address the congress on "The Conservation of Mental Health—a National Problem," and Dr. William H. Welch, Vice-President of the National Committee, will speak on "Some Opportunities for the National Committee for Mental Hygiene."

Personal.—After serving as surgeon of Troop "A" Maryland National Guard, since its organization sixteen years ago, Dr. Charles G. Hill, Baltimore, has been placed on the retired list.——Dr. John H. Drach of Butler, Baltimore County, has been appointed health officer of the eighth district of Baltimore County to fill the vacancy caused by the resignation of Dr. William C. Ensor of Cockeysville.——Dr. Nathan R. Gorter, Commissioner of Health, has appointed Dr. Wilbur P. Stubbs, who has been examiner of throats for the department for a number of years, medical examiner of schools, to fill the vacancy caused by the death of Dr. Richard A. Urquhart.——Dr. Winford H. Smith, superintendent of Johns Hopkins Hospital, will return next week from California, where for the last two months he has been supervising the planning of the million dollar hospital for the University of California.

For Accurate Medical News.—At a meeting of the Baltimore City Medical Society held May 15, announcement was made of an agreement between the members of the publicity committee of the society and the press of the city relative to the publication of medical news. The agreement provides that in the future the representatives of the medical societies of the city cooperate with the representatives of the newspapers in communicating medical news accurately. The committee urges that wherever possible physicians give reliable information on important discoveries, the condition of patients of prominence and on other medical subjects in which the public is interested or which will tend to the public welfare. The names of no medical men are to be used by the newspaper unless written permission is given by the men whose names are used in the news items. Nothing is to be done that will be prejudicial to the interests of the patient or to other parties concerned in the items. The newspaper men agree to seek their information from the proper sources, that accurate information may be obtained. The agreement was adopted by members of the societies and committees were appointed on the various subjects of medical interest on which the newspapers may seek information.

MASSACHUSETTS

Anti-Vaccine Bill Defeated.—The bill passed by the Senate for eliminating the present requirement that children must be vaccinated before they are admitted to the public schools has been defeated by a vote of 132 to 53.

Personal.—Drs. James J. Minot and John F. O'Brien have been elected members of the building committee of the Boston Consumptives Hospital.——The action of the Boston Board of Health in removing Dr. William H. Davis, its vital statistician, has been rescinded.

New Officers.—Essex North District Medical Society at Lawrence, May 6: president, Dr. Israel J. Clarke, Haverhill; secretary-treasurer, Dr. J. Forrest Burnham, Lawrence.——Berkshire District Medical Society at Pittsfield, April 30: president, Dr. Franklin C. Downing, Lanesboro; secretary, Dr. Oliver L. Bartlett, Pittsfield.

Governor Approves State Health Office.—A special message was sent to the legislature by Governor Walsh, May 4, together with a bill which provides for the reorganization of the State Board of Health with one paid official, to be state health commissioner, and six unpaid assistants, including two engineers, two physicians, one sanitary expert and one lawyer.

MICHIGAN

Clinic for Babies and Young Children.—A free clinic for the treatment of babies and young children was opened at the Salvation Army Citadel, Flint, May 2. The clinic is to be held Wednesdays and Saturdays, and deserving cases will be cared for free of charge.

Changes in State Board.—Dr. John L. Burkart has succeeded Dr. Robert L. Dixon as secretary of the State Board of Health. Dr. Dixon has been appointed superintendent of the Michigan Epileptic Farm Colony, Wahjamego.——Dr. Marinus L. Holm is continued as bacteriologist of the State Health Department.

Personal.—Dr. Harry A. Wilson, Lansing, who has been ill at his home, has recovered and resumed practice.——Dr. Bret Nottingham, Lansing, is reported to be critically ill with cancer of the stomach at Harper Hospital, Detroit.——Dr. Edmund M. Pease, of the staff of the Michigan State Hospital, Kalamazoo, has accepted a similar position at the Massachusetts State Hospital, Boston.

State Medical Inspectors Appointed.—Dr. John L. Burkart, Lansing, secretary of the State Board of Health, announces the following list of medical inspectors for the State of Michigan, to conform to the recent congressional redistricting: First district, Dr. Guy L. Kiefer, Detroit; Second district, Dr. James F. Breakey, Ann Arbor; Third district, Drs. Alvin H. Rockwell, Kalamazoo, and Walter H. Sawyer, Hinsdale; Fourth district, Drs. Charles N. Sowers, Benton Harbor, and Dr. John McGuffin, Hastings; Fifth district, Dr. Thomas M. Koon, Grand Rapids; Sixth district, Dr. Henry S. Bartholomew, Lansing, and Dr. Don D. Knapp, Flint; Seventh district, Drs. William H. Smith, St. Clair, and Charles B. Morden, Bad Axe; Eighth district, Drs. Harold A. Hume, Owosso, and Fred A. Johnson, Greenville; Ninth district, Drs. George S. Williams, Muskegon, Julius M. Wilhelm, Traverse City, and George O. Switzer, Ludington; Tenth district, Drs. Edward Goodwin, Bay City, S. Elston Hooper, West Branch, and William T. Dodge, Big Rapids; Eleventh district, Drs. William H. Marshall, Boyne City, Clarence M. Williams, Alpena, and Earl V. McComb, Menominee; Twelfth district, Drs. Edward T. Abrams, Hancock, Henry E. Perry, Newberry, and Frederick M. Harkin, Marquette. The duties of these inspectors are to investigate, on advice from the state office, all outbreaks of communicable diseases, all matters pertaining to water-supply and sewage disposal, and to see that all local authorities attend to their duties in times of epidemic.

MINNESOTA

Personal.—Dr. George T. Baskett, assistant superintendent of the St. Peter State Hospital, was stabbed in the arm, May 8, by an insane patient who had improvized a dagger from heavy galvanized iron wire.——Dr. Leonard E. Claydon, Red Wing, has returned from abroad.

Medical Building Burns.—The two upper floors of the Medical Building, Minneapolis, including the offices of many physicians and dentists, were burned, May 5, with a loss estimated to be from $50,000 to $100,000. The fire is believed to have been of incendiary origin.

Iron Range Physicians to Organize.—At a meeting of the physicians of Mesaba Range held in Virginia, May 11, at the call of Dr. Charles B. Lenont, Virginia, Dr. John C. Farmer, McKinley, and others, it was agreed that an organization should be formed for the mutual benefit of physicians of that portion of Minnesota.

Railroad Water Supplies in Minnesota.—Following the promulgation by the Secretary of the Treasury of the regulation regarding water and ice furnished to passengers by common carriers in interstate traffic, the Minnesota State Board of Health undertook to examine the water supplies for passengers used by the railroads of that state, not only in interstate traffic, but in intrastate traffic as well. This examination was made by R. H. Mullon, H. A. Whittaker and B. M. Mohler of the Minnesota Board and a report made to the Surgeon General of the U. S. Public Health Service, whose aid and approval the Minnesota board had in prosecuting this work. It consisted of field and laboratory examinations and is summarized as follows: Over 50 per cent. (52.45 per cent.) of the supplies investigated could not be recommended in their present state as drinking water supplies. Of the 32 supplies on which recommendation was refused, 31 were pronounced unsafe by the field investigation and of these but 16 showed analytical evidence of pollution. In one instance only did the analytical results alone constitute the refusal for recommendation. A careful and adequate field investigation in addition to the analytical determinations is required before a satisfactory opinion should be ventured concerning the safety of a given water supply. The owners of practically all the condemned water supplies can convert these into safe supplies at a relatively small cost by following in detail the recommendations given each locality.

MISSOURI

Last Graduation from Ensworth.—On April 30, Ensworth Medical School, St. Joseph, graduated its last class and permanently closed its doors. This action is in accordance with the decision of a few years ago that the school would continue only until the class then enrolled had graduated. Nine students received degrees at the graduating exercises.

Personal.—Dr. Clarence B. Francisco, Kansas City, sailed for Europe, May 2.——Dr. Benjamin Y. Jaudon, Palmyra, has been appointed assistant medical director of the Missouri State Life Insurance Company, St. Louis, and will make his home in that city.——In a fire in the office of Dr. Arthur R. McComas, Sturgeon, April 15, his entire office equipment was destroyed.

New Officers.—Fourteenth District Medical Society at Marshall, April 23: president, Dr. Robert L. Evans, Boonville; secretary-treasurer, Dr. John R. Hall, Napton.——Southwestern Missouri Medical Society at Springfield, April 30 to May 1: president, Dr. Charles M. N. Rogers, Mansfield; secretary, Dr. Herbert S. Hill, Springfield, (reelected).——Fifth District Medical Association at Memphis, April 30: president, Dr. Byron B. Potter, Lancaster; secretary-treasurer, Dr. Edward E. Parish, Memphis.——Linton District Medical Society, May 5: president, Dr. Chambers B. Clapp; secretary, Dr. J. Curtis Lyter, both of Moberly.——Harrison County Medical Society at Bethany, May 1: president, Dr. Leslie R. Webb; secretary-treasurer, Dr. W. Worthington Vandivert, both of Bethany.

NEBRASKA

New Officers.—Dixon, Decatur, Cedar, Thurston and Wayne Counties Medical Society at Wakefield, April 27: president, Dr. Charles H. Maxwell, Dakota; secretary-treasurer, Dr. Buis Tender.

Personal.—Dr. A. J. Edstrom has succeeded Dr. C. B. Foltz as police surgeon of Omaha.——Dr. Elmer J. Updegraff, Omaha, who was operated on for disease of the stomach at the Methodist Hospital, May 2, is reported to be in a serious condition.——Dr. Charles F. Moon has been appointed house physician of the Douglas County Hospital, Omaha.

Impostor Faring Westward.—A physician of Lincoln warns physicians against a young man about 5 feet 4 inches tall, blond, blue eyes, who dresses neatly, speaks English fluently, and is aggressive, and who claims to be a medical student of the University of Heidelberg, but that through misfortune and the death of his father he has been obliged to discontinue his studies, and that he expects to enter a Chicago medical school this fall. He calls on professional men, and especially German physicians, telling hard-luck stories, and asking for assistance. He calls himself William Kahlkoff, but his right name is supposed to be L. Hofer. He has some knowledge of drugs, which he obtained by clerking in a German grocery. His name does not appear on the list of students of the University of Heidelberg. He has been heard from thus far in New York, Buffalo, Pittsburgh, Chicago, Milwaukee, Omaha, Kansas City and Lincoln.

NEW JERSEY

New Medical Institution.—A Philadelphia architect has prepared revised plans for a two-story brick municipal hospital for Millville, N. J., 32 x 100 feet, and to cost $20,000.

Contract for Sanatorium Awarded.—The contract for the construction of the new tuberculosis sanatorium pavilion for the Essex County Hospital at Cedar Grove has been awarded for $116,112. This is nearly $4,000 below the estimated cost.

Personal.—Dr. Arley I. Munson, Red Bank, has passed an examination for physician of a state institution, and will receive her appointment so that she may assume charge in the fall.——Dr. Samuel E. Weiner, Atlantic City, was shot at by a man said to be a paranoaic, April 27, but was not injured.

Alumni Meeting.—At the conclusion of the banquet July 1, which will close the annual meeting of the Medical Society of the State of New Jersey at Spring Lake, the New Jersey medical alumni of the University of Pennsylvania will hold their annual smoker. Dr. Alexander MacAlister is chairman, and Dr. Hyman I. Goldstein secretary of the committee on arrangements, both of Camden.

Campaign Against Mosquitoes.—Although Atlantic County can never be entirely free from the mosquito so long as conditions remain as they are in the Cape May County swamps, still with $26,000 to be spent in a campaign against the mosquitoes, this county will be greatly improved. Chief Inspector Eaton, who was for four years in the Canal Zone, will have the services of fourteen inspectors, five of whom will be engaged in a campaign against the fresh-water mosquitoes.

NEW YORK

Vaccinate State Hospital Patients.—Pursuant to orders of the Lunacy Commission, patients at the Hudson River State Hospital, numbering more than 3,000, have been vaccinated by the asylum staff.

A New Dispensary.—Plans have been filed with the Building Department for a four-story dispensary building to be erected at the north-east corner of Gouverneur Slip and Front Street. This will be known as the Gouverneur Dispensary and will be maintained by the city. The estimated cost is $200,000.

Protests Against Bronx Hospital Fail.—The protests of the residents of Seton Falls Park against the construction of a hospital for the treatment of contagious diseases has failed to move the Board of Estimate, which was authorized by the Comptroller to buy a site of 32 acres in the park at a price not to exceed $32,000.

Memorial for Dr. Le Fevre.—Mrs. Helen H. Le Fevre, the widow of the late dean of the New York University and Bellevue Medical College, Dr. Egbert Le Fevre, has made a donation of $10,000, the income of which is to be applied toward the salary of the person who from time to time may accept the office of dean of the Medical College of the University. The trust is to be known as the Dr. Egbert Le Fevre Deanship Fund.

Centenary of Edward Mott Moore.—The Committee of One Hundred of Rochester, appointed to arrange a fitting celebration of the 100th anniversary of the birth of Dr. Edward Mott Moore, and to erect a monument to his memory, has arranged that the celebration shall be held on July 15. The park board has contributed $2,000 toward the expenses of the celebration, and the committee has adopted resolutions asking the city to erect a life-size statue of Dr. Moore, to be placed in Genesee Valley Park.

Civil Prosecutions by Health Department.—Heretofore violations of the Sanitary Code or of the rules and regulations of the Health Department have been prosecuted for criminal action in such violations, but now the department has determined to prosecute such cases as civil actions, since it is frequently difficult to establish criminal intent in such violations. Five such cases have already been terminated and in each instance a judgment for $50 and costs has been obtained. This procedure was inaugurated in connection with the work of the Bureau of Food Inspection.

Asks Aid for Defectives.—An attempt is being made by the State Charities Aid Association and the Association for Improving the Condition of the Poor to induce the legislature at its special session to appropriate $500,000 for additional beds at Letchworth Village, Craig Colony, and Rome. Each legislator has been sent a list of 1,000 feeble-minded persons who experts believe should be cared for by an institution, and the Clearing House for Defectives in New York City has on file 3,000 additional names of persons who need institutional care. If no appropriation is made, it is probable that a bond issue will be authorized.

Friedmann's Tuberculosis Treatment in City Hospitals.—Requests for information in regard to the results of the Friedmann tuberculosis treatment have led the Department of Health to ascertain the recent status of seventy-seven cases treated at the time of Dr. Friedmann's visit to this city. Of the seventy-seven patients treated, nineteen could not be found, while eleven were reported to have moved out of town permanently. The department was therefore able to obtain reports on but forty-seven of the cases in question. These reports show that there are at present five of these patients at home; twenty-two are in hospitals or sanatoria (indicating failure to cure); seven are attending clinics (showing the need of further treatment); one is attended by a private physician, and twelve have died.

Bad Food at State Hospitals.—Inspectors of the Department of Efficiency and Economy together with experts from the Bureau of Animal Industry of the United States Department of Agriculture have completed an inspection of the fourteen state hospitals and made their report to the state hospital commission. This report describes unbelivable conditions in nearly all of the state institutions. According to the report the Hudson River State Hospital at Poughkeepsie has been using the milk from a herd of tuberculous cattle for the past eighteen months. Large quantities of meat and eggs were ordered destroyed at several of the other hospitals. It is stated that at the Utica State Hospital the sanitary condition of the bakery was intolerable and a menace to both patients and employes. In the Willard State Hospital 3,200 pounds of pork was found spoiling for lack of care. It is stated further that the state is losing from $30,000 to $35,000 annually because of the loose construction of the law regarding the maintenance of the families of the employees.

Health Matters and the Chamber of Commerce.—The Rochester Chamber of Commerce, in addition to the attention given to the welfare of Rochester in commercial affairs, has a Public Health Committee to look after health and sanitary matters, which is one of the most valuable divisions of the body. The *Official Bulletin* for May 15 says that the Chamber of Commerce has appointed a physician to examine all its employees with reference to their general health and the presence of transmissible diseases which might be spread among themselves or those with whom they come in contact. It also approves and encourages the plan now adopted by many employers of having their employees examined and followed up by regular inspections. Among the other health and welfare subjects mentioned in the *Bulletin* are the matter of smoke-prevention, clean-up week, the prevention of street accidents and legislation concerning the restriction of the employment of women and children in mercantile establishments. The Chamber in this way proves a valuable ally to the health department in improving health conditions in the city.

New York City

Typhoid and Vacationists.—The weekly *Bulletin of the New York Board of Health* warns persons who take vacations this summer of the danger of contracting typhoid fever, and urges them to be vaccinated against the disease. Antityphoid vaccine can be obtained without charge from the Department of Health. The product is prepared after the formula of the vaccine used in the United States Army.

Facilitating the Distribution of Health Information.—The health department has arranged with two of the large industrial insurance companies of the cities to distribute through their agents and collectors public health bulletins, circulars and health literature of all sorts. Three thousand agents visit the homes of 750,000 families weekly. A new brief folder giving information about typhoid fever and its prevention, printed in a number of different languages, is being prepared for distribution by this means.

Trade School for Cardiac Convalescents.—A report has just been made on an experiment undertaken last year in the care of cardiac convalescent's. A home was opened at Sharon, Conn, where patients from the wards and dispensaries of New York hospitals receive care and treatment for several months and at the same time are taught a trade in which they can engage without danger to their crippled hearts. Provision is also being made to provide employment for the patients when their term of treatment in the home is completed. Among the directors of the organization are Drs. John Winters Brannan, Frederick Brush, Hubert V. Guile, John H. Huddleston and Warren Coleman.

NORTH CAROLINA

Tribute to McBrayer.—The Asheville Board of Health pays Dr. L. B. McBrayer, who recently resigned to accept the medical directorship of the State Sanatorium for Tuberculosis, at Montrose, N. C., a fine tribute by devoting the whole of the May issue of its monthly public health bulletin to an account of the banquet tendered Dr. McBrayer last month when leaving Asheville for the taking up of his new duties. The issue contains his portrait and a detailed account of the speeches at the banquet with Dr. McBrayer's response.

Meetings to Come.—The Medical Society of the State of North Carolina meets for its sixty-first annual session, in Raleigh, June 16, under the presidency of Dr. J. M. Parrott, Kinston, N. C.——The North Carolina State Health Officers' Association will hold its annual meeting June 15, 1914.——The annual joint session of the State Medical Society and the State Board of Health will be held June 17. The session of the Board of Examiners will probably conclude on the second day of the State Society's.——This grouping of meetings of state organizations should be most helpful and interesting to all. It also tends to conserve and further develop the cause of medical solidarity and further unite the various medical bodies of the state. This holding of the various medical meetings at the same time and place is rather a peculiar North Carolina custom originating in 1859, the year the State Board of Medical Examiners held its first meeting, and as the needs of the profession and people have developed the other allied societies and boards, they naturally follow the established precedent of meeting at the same time and place with the parent organization, the State Medical Society. Besides conserving and holding most closely together the different professional bodies. the custom is a great time-saver to the busy physician in that he is enabled to take part in the various meetings, thus keeping in close touch with all the organized professional interests of his state; with the minimum expenditure of time and expense.

OHIO

Dinner to Women Physicians.—The Women's Medical Club of Columbus gave a dinner, May 3, in honor of women physicians attending the Ohio State Medical Association.

Personal.—Dr. Johann F. Dolina has succeeded Dr. Henry D. Rienhart as laryngologist and rhinologist on the medical staff of the Miami Valley Hospital, Dayton.——Dr. George Goodhue, Dayton, is reported to be seriously ill at his home.——Dr. Esmond A. Childs, Geneva, who was operated on for appendicitis at Cleveland recently, has returned home convalescent.——Dr. John H. Axline, Lancaster, suffered a slight cerebral hemorrhage at the Zanesville Hospital, May 6.——Dr. William M. Calhoun has resigned as president of the training school of the East Liverpool City Hospital.

PENNSYLVANIA

Gift to Abington Hospital.—On May 15, the new Abington Memorial Hospital was open to public inspection, and the Board of Trustees announced a gift of $250,000 to the endowment fund, by George W. Elkins of Elkins Park. The gift is in memory of his wife, Stella McIntire Elkins. Mr. Elkins had already given $100,000 in memory of his wife. The hospital will start a training school for nurses immediately. The new buildings, located at York and Woodland Roads, were used for hospital purposes May 18.

Philadelphia

Baby Saving Show.—The Baby Saving Show of the Child Federation in the City Hall Court Yard, was officially opened by Mayor Blankenburg, May 12. Exhibits of proper food, clothing, toys, bottles, tubs, towels and numerous things used for babies, were shown in small booths. The exhibit designed as a preventive, not a curative, measure will be open to the public every day, except Sunday, from 9 a. m. to 5 p. m., until October 1.

Personals.—The Elliott Cresson Gold Medal of the Franklin Institute was presented to Provost Edgar Fahs Smith of the University of Pennsylvania, May 20, in recognition of his work in the field of Electro Chemistry, and in view of his many contributions to the literature of chemical science. Dr. Harry F. Keller, head of the Department of Science, made the presentation address, and the medal was presented by Dr. Walton Clark, President of the Institute.——Ex-Surgeon General Charles F. Stokes, U. S. N., was a guest of honor of the West Branch of the Philadelphia County Medical Society, at its "social night," May 18.

City Milk to be Pasteurized.—Following a meeting of the Board of Health, May 11, Chief Vogelson, of the Bureau of Health, announced that the new regulations regarding the pasteurization of milk will go into effect July 1. Under these rules all milk from non-certified dairies must be pasteurized. A vigorous campaign against compulsory pasteurization of milk was planned by the members of the Independent Milk Dealers' Association, at a mass meeting held on the plaza of City Hall, May 15. This meeting was a direct protest against the recent order from the Board of Health. More than 2,000 persons were present and resolutions were adopted to the effect that the pasteurization of fresh milk was detrimental to the value of the product.

VIRGINIA

Donation to Hospital.—Rockingham Memorial Hospital, Harrisonburg, has been presented by Mr. R. G. Alexander of New York with an elevator, the installation of which cost $1,000.

Raises Milk Standard of Richmond.—Dr. E. C. Levy, health officer of Richmond, announces that the City Board of Health has passed an ordinance, effective September 1, which requires that all milk and cream in the Richmond markets shall be obtained from cows that have passed the tuberculin test.

Personal.—Dr. Julian F. Ward has been elected mayor of Winchester.——Dr. George Ben Johnston, Richmond, has been appointed a member of the Board of Visitors of the Medical College of Virginia, the commission to last for life. This appointment renders it necessary that Dr. Johnston resign from the faculty of the college.——Dr. Herbert Old, Norfolk, has been appointed assistant medical director of the Provident Life and Trust Company, Philadelphia, with headquarters at Philadelphia.

GENERAL

American Pediatric Society.—This society will hold its twenty-sixth annual meeting at Stockbridge, Mass., May 26-28. The preliminary program includes addresses on almost every phase of the diseases of children and their care.

Central Railway Surgeons Hold Meeting.—The annual meeting of the Central of Georgia Railway Surgeons' Association met in Savannah, May 5 and 6, and elected the following officers: president, Dr. Henry B. Disharoon, Roanoke, Ala.; vice-president, Dr. William C. Howell, Dothan, Ala.; and secretary-treasurer, Dr. Walter E. Saunders, Arlington, Ga.

Medical Jurisprudence Association Elects.—The second annual meeting of the American Association of Medical Jurisprudence was held in New York City, May 2. The following officers were elected: president, Charles A. Boston; vice-presidents, Oscar W. Ehrhorn and Dr. D. Percy Hickling, Washington, D. C.; secretary, Charles P. Blaney, and treasurer, John C. West.

Meeting of the American Medico-Psychological Association.—The seventieth annual meeting of the American Medico-Psychological Association will be held in Baltimore May 26 to 29, inclusive. A symposium on "Paresis" will be held May 26. On the second day the annual address will be delivered by Dr. Lewellys F. Barker on "The Relation of Internal Medicine to Psychiatry," and on the fourth day there will be a symposium on "Eugenics."

To Study Tropical Diseases.—The foundation stone of the new School of Tropical Medicine at Calcutta, for the site and laboratory of which the government of India has appropriated $195,000, was laid recently by the governor of Bengal. The institute will accept students from all over the world, and it is hoped that students of medical research institutions of the United States may be sent to the school for study. Communications regarding the school should be addressed to Lieut.-Col. Leonard Rogers, I. M. S., Medical School, Calcutta.

Bequests and Donations.—The following bequests and donations have recently been announced:

Kings Daughters' Hospital, Shelbyville, Ky., donations of $4,000 for an additional building.

Jewish Hospital, Philadelphia, a donation of $5,000 for a perpetual free bed, in memory of the family of Joseph and Amelia Nevil, by George Nevil.

Medical School of the University of Cincinnati, an endowment fund of $31,500, from the estate of Frances Gibson; $1,000 annually for the establishment of six medical school scolarships, a gift from Julius Fleischmann.

American Physicians' Association Meets.—At the closing session of the Association of American Physicians, held at Atlantic City, May 13, the following officers were elected: president, Dr. Samuel J. Meltzer of the Rockefeller Institute, New York; vice-president, Dr. Henry Sewall, Denver; secretary, Dr. George M. Kober, Washington, D. C.; recorder, Dr. Thomas McCrae, Philadelphia; treasurer, Dr. J. P. Crozer Griffith, Philadelphia, and representative on Executive Committee of the Congress of American Physicians and Surgeons, Dr. Theodore C. Janeway, Brooklyn.

American Dermatological Society.—At its annual session held in Chicago, May 14-16, the American Dermatological Society adopted resolutions to the effect that a memorial be presented to the President of the United States and Congress, setting forth the dangers of the leper at large and urging detention in a place under national control. A permanent committee on leprosy was appointed, consisting of Drs. Martin F. Engman, St. Louis, chairman; Charles J. White, Boston, and Dr. James McFarlane Winfield, Brooklyn. The following officers were elected: president: Dr. Sigmund Pollitzer, New York City; vice-president, Dr. Martin F. Engman, St. Louis; and secretary and treasurer, Dr. Oliver S. Ormsby, Chicago.

Appropriations for National Children's Bureau.—The Committee of the House of Representatives in acting on the appropriation of $164,000 asked for by Miss Julia C. Lathrop, head of the National Children's Bureau, reduced the amount to $25,000, but the House raised this to the original sum asked. The Senate has now confirmed this and the Bureau will get the full appropriation. Concerning this the Chicago *Tribune* says:

> If any expenditure is justified from the point of view of constructive statecraft it is an expenditure which conserves the sources of citizenship. Sound manhood and sound womanhood make a state, and these no state can have unless it protects the soundness of childhood in body and mind.

Hearing on the Palmer-Owen Bill.—Friday, May 23, the third public hearing was held on the Palmer-Owen bill, which forbids the shipment in interstate commerce of goods produced in establishments not conforming to the age requirements of the bill in the employment of child labor. Among the many organizations supporting the bill are the Child Labor Committee of Virginia, the Executive Council of the Massachusetts Board of Trade, and the Los Angeles Chamber of Commerce. According to the National Child Labor Committee, of 78,000,000 people who live in mining states, 41,000,000 have forbidden children under 16 to work in mines; 45,000,000 have placed on the statute books of their states an eight-hour day for children, 58,000,000 people have prohibited night work for children under 16.

Tropical and Parasitic Diseases Among Immigrants.—Surgeon-General Blue (*Pub. Health Rep.*, May 15) directs medical officers of the Public Health Service engaged in the medical examination of aliens to give especial attention to the detection of the following diseases:

Kala-azar. Reported in China, Egypt, Arabia, Tunis, Algiers, Greece, Malta, and generally in the region surrounding the Mediterranean Sea.

Schistosoma Haematobium. Blood fluke infection. Found in South Africa, Egypt and Cuba.

A group of infections found especially in China and Japan as follows: *Clonorchis.* Formerly *Opisthorchis sinensis,* also called Japanese liver fluke. It is stated to be as common in some parts of Japan as hookworm is in Africa. *Paragonimus Westermanii.* Japanese and Chinese lung fluke. The disease caused by this parasite is extremely chronic and is accompanied by more or less serious hemorrhage and is often mistaken for consumption. *Diplogonoporus Grandis.* Japanese tapeworm. Resembles Russian tapeworm. *Schistosoma Japonicum.* Blood flukes of China and Japan.

Guiteras Called to Tampico.—It has been announced that Dr. G. M. Guiteras of the Public Health Service has been called to Tampico, Mexico, with the consent of the constitutionalist forces, now in control of that place, to "clean up" the city. Tampico is believed to be a breeding ground for many tropical conditions, especially yellow fever, small-pox and malaria. Dr. Guiteras will investigate the sanitary situation fully and make recommendations to remedy the many evils he will no doubt discover. His absence from Vera Cruz will place in charge of health conditions there Dr. Von Ezdorf, the next officer in charge under the temporary United States control. This movement on the part of the constitutionalists is significant of the power for good which the United States possesses in its public health service, and shows again the recognition now being accorded to these workers by foreign nations.

Dr. Theobald Smith Becomes Director of New Institute.—Announcement has been made by the Rockefeller Institute for Medical Research that Dr. Theobald Smith, now professor of comparative pathology in the Harvard Medical School, has accepted the position of director of its new department of animal pathology. This department has but recently been established, and the fact that Mr. Rockefeller has added $1,000,000 to the endowment of the institute for the support of this department, and that Mr. James J. Hill has pledged $50,000 for its use in the study of hog cholera became known only a few weeks ago. The department is not yet organized or equipped, but it is expected to begin active work within a year. In the meantime, Professor Smith will continue his connection with Harvard University so long as may be necessary to complete work on which he is now engaged at its medical school. He has had a distinguished career as a pathologist and bacteriologist and is considered as one of the world's foremost bacteriologists.

Safety Campaign Lessens Personal Injury Cases.—During the last four years the leading industries of the country have paid a great deal of attention to the question of safety to the end that the number of personal injury cases might be lessened. Since the movement was started, the Chicago & Northwestern Railway has reduced the number of accidents nearly 30 per cent. During the four years 10,000 fewer persons were injured on this system than in the preceding four years. On the Great Lakes the Lake Carriers' Association has conducted a systematic campaign for the elimination of the avoidable accident by distinctly marking dangerous places and by appointing safety committees from among the crew on each ship. In addition, the association has begun a campaign on sanitation to promote the physical well-being of the men. The initial steps in the campaign have to do with the care and preparation of food supplies. Every dealer on the whole chain of lakes supplying meats, milk, groceries and ice to the boats has received a circular from the Welfare Plan Committee of the Lake Carriers' Association outlining certain simple rules to be observed in the care of foodstuffs. In addition, the sanitary committee of the Lake Carriers' Association has defined the areas on the Great Lakes from which drinking water may be drawn for the vessels.

CANADA

Typhoid Abated.—The outbreak of typhoid fever in the province of Quebec along the Richelieu River has abated. The water-supply of numerous towns is being treated with hypochlorite.

Adami Gold Medalist.—John George Adami, professor of pathology at McGill University, Montreal, has been awarded the Fothergill gold medal by the Medical Society of London, England, for 1914, for his work on pathology and its application to practical medicine and surgery.

Medical Act Amended.—The New Brunswick Medical Act has been amended. The matriculation fee has been advanced from $5 to $10; examination in medicine from $10 to $30; registration from $10 to $40. Registered physicians are now required to pay an annual fee of $1, or a single life payment of $20.

Vaccination at McGill.—The Corporation of McGill University at Montreal has adopted a regulation that all students entering the university shall be required to present a certificate or other satisfactory evidence of successful vaccination, or at once be vaccinated in a manner satisfactory to the medical examiner.

Tuberculosis Experts to Meet.—The fourteenth annual meeting of the Canadian Association for the Prevention of Tuberculosis, of which the governor-general is honorary president, will be held in Halifax, N. S., July 13 and 14. Dr. S. Adolphus Knopf, New York City, will deliver the oration on "The Modern Warfare Against Tuberculosis as a Disease of the Masses."

Personals.—Dr. Max O. Klotz, President of the Ontario College of Physicians and Surgeons, has sailed for Europe.——Dr. J. Price Brown, a well-known rhinologist and laryngologist of Toronto, has been forced to retire from active practice on account of glaucoma.——Dr. Charles F. Martin, Montreal, has returned from a trip round the world.——Dr. Francis R. Gow, Halifax, N. S., has been appointed chief medical officer and inspector for immigration at that port.

University News.—The annual instruction for the benefit of postgraduate students conducted by the medical faculty of McGill University, Montreal, will commence June 1.——Lectures in the medical department of McGill University ceased April 30. The examinations will be held May 4 and succeeding days. The graduating class this year numbers seventy-five.——Examiners at Toronto University will take part this year at the examinations of McGill University, while those from McGill will go to Toronto. This will be done this year only in anatomy and pathology, but in future years this is expected to be extended to embrace many subjects.

Hospital News.—The municipal grant to the Prince Rupert (B. C.) Hospital has been reduced from $10,000 to $7,000. The British Columbia government has made a grant of $100,000 to the Vancouver General Hospital; next year the amount will be $125,000.——A grant of $2,000 has been made by the provincial government of British Columbia for a new hospital at Masset.——The Medicine Hat General Hospital has received a municipal grant of $19,000. Of this amount, $5,000 will be devoted to current expenses and $14,000 for property purchase.——A sanatorium for the treatment of tuberculosis cases is to be built at once at Calgary. A year ago the sum of $30,000 was voted by the Calgary Council for the purpose.——The Brandon (Man.) Hospital is to expend $100,000 on a maternity home and extend the mission building and nurses' home.——In the province of Ontario there are eighty-nine public hospitals, fifty-seven private hospitals, thirty-seven refuges, eight sanatoria for consumptives, thirty-three orphanages, three homes for incurables and thirty-one county houses of refuge. During the year ended Sept. 30, 1913, 68,738 patients received treatment in the hospitals, and 4,058 deaths occurred. The total amount expended during the year on hospitals was $3,155,340, of which amount the Ontario government granted $232,276.

LONDON LETTER

London, May 8, 1914.

The Royal Commission on Venereal Diseases

The Society of Medical Officers of Health has called the attention of the commission to the lack of exact information regarding the present prevalence of syphilis and other venereal diseases either as causing illness or death; the *misleading or incomplete character* of certified causes of death, particularly of the remote causes in fatal diseases of the nervous or circulatory systems; the absence of any systematic provision for the recognition of the diseases in question, and the relation of syphilis to miscarriage, stillbirths and deaths among infants in the first year of life, especially the first four weeks.

Sir Victor Horsley insisted on the importance of education of the public in regard to venereal diseases and of children in sex matters. If the nature study part of elementary education were extended and every child taught the groundwork of hygiene, instruction in sex matters could gradually be brought into its mind. In secondary schools full instruction could be given. Sir Victor dwelt with the difficulty with which physicians are faced in public health matters by reason of the law of libel. They ought to be able to warn any one who, to their knowledge was likely to be infected, but at present they were liable to an action for libel. He was in favor of notification to the health officer. This would probably be resented both by physicians and by the public, but the history of notification showed that objections had been made in regard to even the simplest diseases. The notification of scarlet fever was violently resisted at first. The notification should be confidential. He was in favor of treatment in special wards of general hospitals.

Suggested Prohibition of Marriage of Neurotics

In a lecture at the Institute of Hygiene, a leading neurologist, Dr. J. S. Risien Russell, spoke of the congenital defects of the brain and consequent idiocy that tend to follow intermarriage, while to the mating of neurotics, especially epileptics, he said, could be traced a large proportion of neuroses. The rather remarkable fact that neurotics actually tend to marry neurotics called from him the expression, "Would that neurotics could be attracted by the phlegmatic, as the offspring would be much less likely to be productive of so many unstable individuals prone to various mental and nervous disorders." On the facts, however, most authorities are in agreement. The question of prevention is the difficulty. Dr. Russell advocated the full policy of prohibition of marriage of persons "known to be affected by some malady of the nervous system that is hereditarily transmissible, even when it is proposed that they should mate with some one of strong nervous organization who comes of a stock free from any suspicion of nerve degeneracy." Neurotic parents should be made to recognize the *importance* of having their children brought up away from the neurotic atmosphere in which they are usually steeped and which cannot fail to be productive of the most harmful effect.

The Struggle Between the Profession and Friendly Societies in Australia

The relations between the profession and the friendly societies at the antipodes are of the same strained nature as in this country. At a conference of friendly societies held in Sydney considerable discussion took place on this subject. A paper read by Mr. Robert Clark of South Australia shows very well the friendly societies' point of view. The antipathy of the profession in this country to "medical institutes" (organizations for the employment of whole-time physicians to attend the members) has been described in a previous letter to The Journal. In Australia there is the same antipathy. Mr. Clark said that through the establishment of medical institutes, many members of the profession had ceased to entertain that friendly feeling toward societies that formerly contributed to the welfare of all concerned. The institutes, as agencies in friendly society work, had proved of considerable value in some localities, but, owing to the hostile attitude of the British Medical Association, the choice of medical officers was now practically confined to what might be termed "non-union" doctors, and it seemed probable that in the near future the institutes would have trouble in procuring the necessary professional assistance. The friendly society practice had assisted a large number of physicians to attain eminence in the profession. The extent of benefits to members' wives and families had been extremely irritating to the profession, but lack of organization and keenness of competition had enabled the societies to make far-reaching contracts. Clark denied that the societies had sweated the profession. Invariably the doctor had quoted the terms which the society had accepted. That the societies had had the best of the bargain during recent years was generally admitted by leading representatives, and that the profession earned and deserved higher rates of remuneration was freely acknowledged at the 1912 Sydney conference, which agreed, without demur, to increased rates. The organization of the medical profession during the past eight or ten years had been truly marvelous. It was asserted that 98 per cent. of the profession were in the British Medical Association. They were in a position to dictate terms, and it was improbable that societies would be able to supply in the near future the existing medical benefits. The public hospitals were practically closed to lodge members, largely through the influence exerted by the profession. Until very recently a member was admitted *on order*, and, if he was in a position to pay for attention, he was called on to do so. No objection could be urged to this, and the amount was usually fixed at $5 per week. Now only the indigent were eligible for prolonged treatment. The lodge and family doctor was disappearing, and the mutual confidence which, true to the *traditions* of each side, existed for generations, was rapidly being dissolved in the commercial atmosphere of the present.

PARIS LETTER

Paris, May 1, 1914.

The Prophylaxis of Leprosy

At its session, April 28, the Académie de médecine terminated the open discussion on the action of the Minister of the Interior (The Journal, Feb. 28, 1914, p. 711) on leprosy, its dangers, and the preventive measures which should be taken *against it. The members of the academy passed the* following resolutions: (1) leprosy should be included among reportable diseases; (2) lepers should be submitted either to oversight or to isolation, as the case may demand; (3) foreigners suffering from leprosy should be excluded from French territory; (4) a special commission should consider each case. Furthermore, the academy emphasized the fact that to work for the prevention of leprosy in France would be useless unless the public officials could be impressed with the need of rigorous measures against the diffusion of leprosy in the colonies and the countries under the French protectorate, in which the danger is far greater than in the metropolis.

Death of Professor Van Tieghem

French science has suffered a great loss in the recent death of the famous botanist, M. Philippe Van Tieghem who recently died, aged 75. He had been a member of the Académie des Sciences for about forty years and was one of the first of Pasteur's collaborators. At that time he prepared for his doctor's degree in physical sciences, his thesis on the subject of ammoniacal fermentations, which is still considered authoritative. It was in botany, however, that his influence was most important; his "Traité de botanique" completely altered the method of studying that science, at home as well as abroad. The classification of plants has been, one might say, revolutionized by the works of Van Tieghem.

Peritoneal Tuberculosis in Infants

At the last session of the Académie de médecine, Dr. Marfan, professor of therapeutics at the Faculté de médecine de Paris, gave an interesting address on this subject. Tuberculous peritonitis is observed most frequently in advanced childhood, from 6 to 15 years of age; below the age of 6 it is infrequent and appears less often in early infancy. Before the age of 2 years the disease is rarely seen, and has clinical aspects quite unlike the usual symptoms, so that its diagnosis is ordinarily very difficult. Without doubt, some ascitic and fibrocaseous conditions may be observed in infants as well as in older subjects. More often ascites and "peritoneal nodules" are absent; the clinical picture lacks clearness; the diagnosis long remains uncertain. Tuberculous peritonitis is much more dangerous in infants than in older children; below the age of one year it seems invariably to result in death. Its progress is also rapid; instead of lasting for years, the disease develops in some months or even in weeks. One of the conditions which renders the prognosis more grave is the difficulty of recognizing the disease in time; to recognize it sooner would, perhaps, mean its more successful treatment. Without doubt the skin reaction to tuberculin has greatly favored the early recognition of the disease. In spite of the great value of this test, however, the evidence which it furnishes is not sufficient to establish a diagnosis in every case; when the test is positive it indicates that there is a tuberculous lesion in the organism, but it does not show the location nor does it tell us whether the lesion is active or dormant. For these reasons the clinical examination retains its value.

For guidance in diagnosis, Marfan attaches great importance to the diverse forms of "protuberant abdomen" in the infant. Beside the swelling due to ascites, or to a liquid or solid tumor, two varieties of enlarged abdomen remain: the flaccid, and the tympanitic. The flaccid variety is due to relaxation of the gastric, intestinal and abdominal muscles, and almost always accompanies rachitis, of which it is one of the elements. The tympanitic enlarged abdomen has a varying significance according to its transitory, intermittent, or chronic nature. Transitory tympanites is caused by acute gastro-enteritis or acute peritonitis; intermittent tympanites, whether slight or general, is caused by nervous affections of the stomach or intestines, and perhaps results from the production of gas. As for chronic generalized tympanites, its significance varies according to whether or not it is accompanied by digestive disturbances with diarrhea or constipation. Chronic tympanites with chronic diarrhea is due to intestinal ulcerations; with obstinate constipation and dating from birth or very early life, it is indicative of those forms of congenital constipation which are related to intestinal malformation, and are still grouped under the name of Hirschsprung's disease; without diarrhea and without obstinate constipation, it appears to result from tuberculosis either of the peritoneum, or of the mesenteric ganglions in which the intestine is not involved.

BERLIN LETTER

Berlin, April 24, 1914.

Annual Meeting of the German Surgical Society

The most important subject for discussion at the meeting of the Deutsche Gesellschaft für Chirurgie, which was held as usual at Berlin, in the middle of April, was the cause and treatment of postoperative ventral hernia, the discussion of which was introduced by Sprengel of Brunswick.

POSTOPERATIVE VENTRAL HERNIA

The speaker distinguished, in addition to the hernia of the abdominal wall in its proper sense, paralysis of the abdominal wall (following section of the nerves supplying the rectus), and stretching of the abdominal wall. The causes of these conditions are the tamponade, wound infection, inaccurate suture and improper suture material and serious postoperative injury, as from vomiting, etc. To these four factors, which have been long known, may be added a fifth, which has been brought out by recent investigation, namely, the use of a physiologically incorrect method of abdominal incision. In view of the fact that not only the technic of tamponing but also the indication for its application have been modified in the course of time and that, on the other hand, a more correct plan of incision is possible, the speaker recommended the following: When it is possible, an alternate incision is to be used, such as is applicable for most gynecologic laparotomies, in almost all appendix operations, in most operations on the kidneys and finally for the treatment of all intraperitoneal and retroperitoneal abscesses. For all severe cases, that is, in general, cases in which a simple suture by layers is not sufficient with a physiologically correct incision, Sprengel recommends the mattress-suture with catgut and a fine linen thread superposed (the material in suppurative cases should be boiled catgut, otherwise fine linen).

Drainage and tamponade he regards as supplementary to the discharge from the abdomen obtained by the operation. By limiting these and fixing more exactly the indications, the prognosis of cases treated by tampons has been improved, although the number of cases has become greater. The method of incision appears not to have the same importance for cases treated with tampons, at least in the upper part of the abdomen, as for the cases which are sutured immediately and the abdomen completely closed. It may be shown by statistics that in the upper part of the abdomen, hernia formation is less frequent than in the lower part, probably because the demands on the abdominal wall are less. The important question, whether or not the attempt to limit the use of tampons also involves danger, was answered in the affirmative and thoroughly discussed. The indication requiring a secondary operation to close the abdomen from fear of a postoperative hernia, the speaker could not endorse. The operative measures for the treatment of an extensive ventral hernia were discussed on the basis of whether the muscular and fascial tissue present (1) is sufficient for a satisfactory closure, or (2) is not sufficient for a satisfactory closure, or (3) is quite insufficient. The speaker advocated an extensive application of transplantation of fascia and condemned the use of material foreign to the body. The autoplastic use of muscle in the sense of the bridge plastic method of Pfannstiel-Menge should be considered as a last resort in extensive hernia. A modification of the last method was recommended.

In the discussion, Perthes of Tübingen recommended the overlapping method of Mayo not only for operations on hernias which have already occurred, but also to prevent them. He had observed only two hernias as a result of infection among thirty-nine cases in which operation had been performed by this method.

Völcker of Heidelberg laid great stress on the preparation of patients who are to be operated on for hernia (reduction of obesity, massage). In the operation itself, he tries to avoid, as much as possible, the opening of the hernia.

Menge of Heidelberg emphasized the fact that the musculature plays a much more important rôle in preventing hernia than the fascia and the aponeuroses. It must be well sutured and anchored by means of a cross-suture of the fascia. In sixty cases which were examined after the operation, he found no hernia. He opposes the wearing of a bandage after the operation.

König of Marburg emphasizes the importance of gymnastic exercises of the abdominal muscles and believes that the earlier demands made on these muscles in children, in whose cases drainage is more frequently employed than in those of adults, protects them from hernia. He employs periosteum from the tibia in cases in which he can get a piece wide enough; in other cases he uses fascia.

Wullstein of Bochum laid stress on the importance not only of the muscles but also of every single layer of the abdominal wall. He uses the principle of doubling in all the layers. He has never found it necessary to use foreign material. He does not agree with Sprengel that a prophylactic operation is not indicated. In case of large incisions and corpulent persons, Wullstein regards this as indicated. In order to obtain a good result, the pendulous abdomen, which is usually present, should be corrected.

Küttner of Breslau, in contrast to the plan of Sprengel, has always sutured with silk and moistened the line of suture with 0.1 per cent. mercuric chlorid, refraining from running sutures. He has remained faithful to the longitudinal incision.

TREATMENT OF MALIGNANT TUMORS

The reports of von Eiselsberg of Vienna on his experience in the treatment of malignant tumors with radium and the Roentgen rays also excited an extensive debate. The speaker first considered the radium treatment and distinguished the prophylactic and the curative treatment. In the first class he has seen good effect in a number of cases, especially a case of carcinoma of the upper jaw (in which operation was performed in 1910) but, on the other hand, he also had injurious effects, as in one case of carcinoma of the tongue. With a view to cure, he has treated only inoperable cases and has seen healing in a number of cases in which, however, a sufficient time has not elapsed to permit him to speak of a permanent cure. Cases of basal-celled carcinoma have shown especially favorable results (seven cures in nine cases). In some cases, by the rays he was able to make operable tumors which were otherwise apparently inoperable. A malignant tumor of the thyroid was healed, but the patient acquired a large radium ulcer which made a plastic operation necessary. Eiselsberg lays stress on the fact that in such cases one must accept this accident as a lesser evil. In a large number of cases, only temporary improvement was obtained. In four cases of carcinoma of the esophagus with much stenosis, dilatation occurred very quickly; but in some of these a new stenosis developed above the tumor as a result of radium burns. Aside from these lesions, however, cases were observed in which the treatment had a directly unfavorable effect. When healthy vessels traverse the area irradiated, there is a direct danger of erosion and consequent hemorrhage. In some cases, also, a rapidly increasing cachexia was observed as a result of the absorption of the tumor material destroyed by the radium. The same is true of the Roentgen rays as of radium. As yet there have been no permanent successes, but remarkable improvement has resulted. Here also, one must not be deterred by burns of the skin if there can be obtained thereby a cure of the patient from his malignant disease. From his experience, Eiselsberg would give the preference to radium in carcinoma of the esophagus and rectum, but, on the other hand, in a large part of other cases, he prefers the Roentgen rays. Operation should still be performed in operable cases; inoperable cases should receive radiotherapy, and prophylactic irradiation should be undertaken.

In the discussion, Wilms of Heidelberg emphasized the importance of prophylactic irradiation, especially for carcinoma of the breast. In twenty cases of carcinoma of the breast which he irradiated after the operation, the patients suffered no relapse. He was inclined to believe that one might be content with extirpation of the tumor in carcinoma of the breast if an energetic postoperative treatment with the rays was carried out. The regional lymph-nodes were particularly influenced. He explains this by the fact that the autolytic processes which are going on ordinarily in the glands are increased still more by the action of the rays. Carcinomas of the lips and tongue are especially suited to radiotherapy.

Spalitzer of Vienna made a special report on cases treated with the Roentgen rays at the Vienna clinic. Of sixty-four cases, twelve were healed, seventeen remarkably and thirteen slightly improved. Five were aggravated and seventeen showed no effect. These results can be obtained only with modern apparatus by using thoroughly filtered high doses and hard tubes. In the previous use of radium an ulcer occurred more readily. Operable tumors belong to the knife.

Tilmann of Cologne emphasized the slight penetration into carcinomatous tissue and the variable effect of the rays on various tumors which for the present make radiotherapy so uncertain that operable tumors should not be submitted to it. On the other hand, Krönig of Freiburg, in view of the unfavorable statistics of operation, would have operable tumors treated with the rays and that not only in case of carcinoma of the female generative organs but also carcinoma of the breast. Müller of Rostock protested against this proposition, saying that we do not know whether we can secure a final cure of carcinoma with the rays (that is, over five years). On the other hand, we do know that this is attained by surgery.

Werner of Heidelberg also had permanent cures to report; 286 cases were treated with mesothorium. Of thirty-seven carcinomas of the stomach, a distinct retrogression was observed in eight cases. Of nineteen cases of cancer of the esophagus, ten were maintained in good condition for six months, but only one longer than a year.

Heymann of Breslau reported that in the gynecologic clinic of that place operable tumors were surgically treated, but a preliminary treatment with the rays was undertaken for the removal of fetor and hemorrhage. The prophylactic postoperative treatment had been successful, but it must be carried on energetically for many months. The combination of the Roentgen rays with mesothorium has given good results.

Krause of Berlin reported the successful treatment of small relapses by the Roentgen rays and the value of prophylactic treatment after operation on the breast. In two cases, in which it could be shown that a definite part of the breast had not been irradiated, relapses occurred in these places. The rays must be filtered and tubes under ten We. (this refers to Wehnelt's penetrometer) must not be used.

Perthes of Tübingen referred to a case of carcinoma of the lips treated by him by radiotherapy which had remained cured for more than six years.

Fritsch of Breslau discussed Abderhalden's method of serodiagnosis of cancer. He had tried to test its value as an indication for operation. By the use of numerous parallel tests and frequent repetitions of the reaction, it is possible to exclude the principal sources of error, but even then it had only the value of probability and was useful only in connection with the clinical picture. Fritsch believed, however, that even if the scope of application of the reaction is very small, there are cases in which the test can be of service to the clinician, and one is not justified for that reason in rejecting it completely.

Marriages

Caryl Ashby Potter, M.D., St. Joseph, Mo., to Miss Marie Whitney of Brooklyn, N. Y., at Hubbard Woods, Ill., April 4.

Charles Henry Dean, M.D., Northampton, Mass., to Miss Martha Gertrude Jones of Salisbury, Vt., May 6.

Phineas Hilhouse Adams, M.D., to Miss Marguerite La Wall Janvrin, both of New York City, May 5.

David Ralston, M.D., to Mrs. Alice Daly, both of Cadillac, Mich., at Grand Rapids, April 30.

George Enos Miller, M.D., Hammond, Ind., to Miss Eda L. Flasher of Chicago, April 22.

Alford Jay Farnham, M.D., Reinbeck, Ia., to Miss Jean Brown of Traer, Ia., April 29.

Deaths

David William Bulluck, M.D. University of Maryland, Baltimore 1873; a member and once vice-president of the Medical Society of the State of North Carolina; formerly president of the Atlantic Coast Line Surgeons' Association; and at the time of his death president of the Onslow Medical Society; local surgeon at Wilmington, N.C., for the Atlantic Coast Line; a member of the Board of Directors of the Eastern Hospital for the Insane, Goldsboro; and for many years a member of the Board of Health of New Hanover County; died at his home in Wilmington, May 6, from typhoid fever, aged 60.

John Benjamin Lewis, M.D. New York University, New York City, 1853; medical director of the Travelers' Insurance Company, Hartford, for nearly forty-five years; a member of the Connecticut State Medical Society and Association of Life Insurance Medical Directors; surgeon of the Fifth Connecticut Volunteer Infantry, later Brigade Surgeon and medical director of the department of West Virginia during the Civil War; brevetted lieutenant colonel in 1865 for 'faithful and meritorious service'; died at his home in Hartford, April 26, aged 82.

Charles N. Field, M.D. College of Physicians and Surgeons in the State of New York, 1870; a Fellow of the American Medical Association, and American Academy of Ophthalmology and Laryngology; a member of the American Association for the Advancement of Science, and the American Association of Railway Surgeons; a veteran of the Civil War, in which he served in the Hospital Corps of the First New York Volunteer Infantry; a practitioner of Jefferson, Ia., since 1871; died at his home in that place, May 7, from pneumonia, aged 71.

Samuel G. Gray, M.D. University of Pennsylvania, Philadelphia, 1863; a member of the Medical Society of the State of Pennsylvania; and once vice-president of the Lancaster County Medical Society; assistant surgeon of the Twenty-Ninth Pennsylvania Volunteer Infantry and surgeon of the Twentieth Pennsylvania Cavalry during the Civil War; from 1875 to 1878, a surgeon on Atlantic liners; died at his home in Landisville, May 2, from heart disease, aged 76.

William Edmond Weber, M.D. College of Physicians and Surgeons, in the city of New York, 1894; a Fellow of the American Medical Association; chief inspector of the milk department of the New York Board of Health; attending physician to the German Hospital; and lecturer on pediatrics in the New York Polyclinic; died suddenly in a subway station in New York City, May 7, aged 46.

Thomas Corwin McCaughey, M.D. Rush Medical College, 1868; one of the most prominent practitioners of central Illinois; a Fellow of the American Medical Association; and once president of the Vermilion County (Ill.) Medical Society; a veteran of the Civil War; died at his home in Hoopeston, Ill., May 6, from heart disease, aged 73.

Archie Eli Brimmer, M.D. Rush Medical College, 1910; of Minneapolis; a Fellow of the American Medical Association; died in the Eitel Hospital, Minneapolis, May 4, from meningitis, a week after a surgical operation, aged 31.

Lucius Lavoisier Lamar, M.D. University of Texas, Galveston, 1903; a Fellow of the American Medical Association; a specialist on diseases of the eye, ear, nose and throat; died at his home in Florence, Texas, May 2, aged 35.

Henry Cabell Tabb, M.D. Medical College of Virginia, Richmond, 1860; surgeon in the confederate service throughout the Civil War; for twenty years medical director of the Life Insurance Company of Virginia; died at his home in Richmond, Va., May 7, aged 75.

Patrick J. McKeown, M.D. Bellevue Hospital Medical College, 1890; a Fellow of the American Medical Association; formerly health officer of Long Island City; and a member of the staff of St. John's Hospital; died at his home in Long Island City, May 3, aged 53.

Frederick W. Meddaugh, M.D. Jefferson Medical College, 1909; of Williamsport, Pa.; a member of the Medical Society of the State of Pennsylvania, aged 26, was killed in an automobile accident on the Lycoming state road near Williamsport, May 5.

John A. Brobst, M.D. College of Physicians and Surgeons, Baltimore, 1885; secretary to Secretary of the Navy Thompson, at the time of the settlement of the Nova Scotia fisheries claim; died at his home in Allentown, Pa., May 4, from septicemia, aged 61.

Elmore Y. Munsell, M.D. Starling Medical College, Columbus, Ohio, 1869; for twenty-one years a practitioner of Portland, Ore., but for the last four years a resident of Ocean Park, Wash.; died in the Good Samaritan Hospital, Portland, April 28, aged 75.

James Ney Wright, Jr., M.D. University of Michigan, Ann Arbor, 1882; a member of the board of liquor license commissioners of Licking County, Ohio; formerly county auditor; died at his home in Newark, Ohio, about May 5, aged 55.

William H. Minnich, M.D. College of Physicians and Surgeons, Baltimore, 1890; a member of the Medical Society of the State of Pennsylvania; for eight years jail physician of York County; died at his home in Dallastown, Pa., May 1, aged 49.

James S. Black, M.D. For sixty-three years a practitioner of Ohio; died at the home of his son in McConnellsville, Ohio, February 6, from uremia, aged 87.

James O. Stewart, M.D. McGill University, Montreal, 1880; for many years a practitioner of Cazaville, Que.; died at his home in Montreal, February 20.

Elva M. Thornberry, M.D. Western Pennsylvania Medical College, Pittsburgh, 1887; died at his home in Barnesville, Ohio, March 13, aged 49.

Norman Glenn Parker, M.D. Cleveland University of Medicine and Surgery, 1897; formerly of Onawa, Iowa; died in Port Royal, Pa., March 15.

Oliver L. Blachly, M.D. Jefferson Medical College, 1887; formerly of Sparta and Wilkinsburg, Pa.; died at his home in Pasadena, Cal., April 18.

Nelson Loar, M.D. Physio-Medical College, Cincinnati, 1867; died at his home in Bloomington, Ill., April 29, from senile debility, aged 74.

Annie M. Brown, M.D. Women's Medical College of the New York Infirmary, 1880; died at her home in Brooklyn, N. Y., April 30, aged 72.

Harry Atherton Smith, M.D. Medical School of Maine, Brunswick, 1890; died at his home in West Roxbury, Boston, April 27, aged 47.

Eugene Frederick Pearce, M.D. Long Island College Hospital, Brooklyn, 1883; died at his home in Brooklyn, April 30, aged 55.

George H. W. Ryan, M.D. McGill University, Montreal, 1899; died at his home in Vermillion, Alta., February 21, aged 40.

John C. Peyton, M.D. Jefferson Medical College, 1866; of Winter Garden, Fla.; died in Orlando, Fla.; February 27, aged 72.

James W. Long, M.D. Meharry Medical College, Nashville, 1899; died at his home in Texarkana, Texas, April 25, aged 41.

James J. Brown, M.D. University of Toronto, Ont., 1887; died at his home in Owen Sound, Ont., February 24, aged 53.

George B. Loring, (license, Utah, five years' practice, 1894); died at his home in Monroe, Utah, April 25, aged 49.

Walter Cartier, M.D. Laval University, Montreal, 1905; of Coteau Station, Que.; died in Montreal, January 28.

T. R. Dice, M.D. St. Louis Eclectic Medical College, 1876; died at his home in Utica, Mo., April 19.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE TURNOCK MEDICAL COMPANY

The Lynott-Katz-Read Mail-Order Medical Concern Declared Fraudulent by the Federal Authorities

The Turnock Medical Company was a fraudulent mail-order concern operating from Chicago. May 6, 1914, the Postmaster-General issued a *fraud order* against the Turnock Medical Company and Dr. T. Frank Lynott, the medical employee who is described in the Turnock "literature" as the "specialist in charge." At the time the federal authorities put the quietus on this fraud, the Turnock Medical Company was receiving about four thousand letters a day from the gullible sick, and its income is said to have been approximately $350,000 in the last year of its existence. It has been doing business eight years.

For some years past, the Propaganda Department has been keeping itself informed on the methods of the Turnock Medical Company and T. Frank Lynott. Until comparatively recently, the men behind the Turnock Medical Company are said to have been:

Eugene Katz, President and Treasurer.
George J. Katz, Vice-President.
Sam D. Katz, Secretary and Manager.

In the operation of a mail-order medical concern a knowledge of medicine is not necessary. A due appreciation of the gullibility of the sick; an absence of moral sense; an utter disregard for truthfulness and common honesty—these are the essential requirements to make a commercial success of concerns like the Turnock Medical Company. And the Turnock concern apparently fulfilled these requirements.

THE PERSONNEL

Eugene Katz is said to have been a professional advertisement writer before he went into the fraudulent medical mail-order business. George J. Katz and Sam D. Katz were indicted by a federal grand jury in January, 1914, on the charge of operating a fraudulent mail-order concern under the style of "Dr. G. B. Abbott." The "Sam Katz Oxygen Catarrh Treatment" is another fraud operated from the same address as the Abbott swindle.

THE COMMERCIAL VALUE OF URIC ACID

The Turnock Medical Company sometimes advertised under its own name and sometimes under the name of Dr. T. Frank Lynott. Its advertising slogan was "Uric Acid." All diseases, according to the Lynott-Turnock theory, are due directly or indirectly to uric acid. During the past three or four years letters have been sent to the Turnock Medical Company under various names and from widely separated places, describing various hypothetical cases. One letter was sent in describing a well-advanced case of cancer of the rectum. According to Lynott's "diagnosis," this unfortunate individual had an "excess of uric acid." Wrote the quack:

> "I am positively certain in my own mind that I have the method to cure you. The suffering that you have undergone in the past must convince you that there is no time to be lost. . . . A person at your age has still a long and happy life ahead if the disease can be gotten rid of now."

A letter mailed from another part of the country contained one of Lynott's "symptom blanks" on which check marks had been placed against the following symptoms: (1) "Too frequent desire to urinate;" (2) "Pain or soreness in the bladder;" (3) "Pain or soreness in the kidneys." This hypothetical party, according to Lynott's "diagnosis," also suffered from an "excess of uric acid," and Lynott wrote, per stock letter "A":

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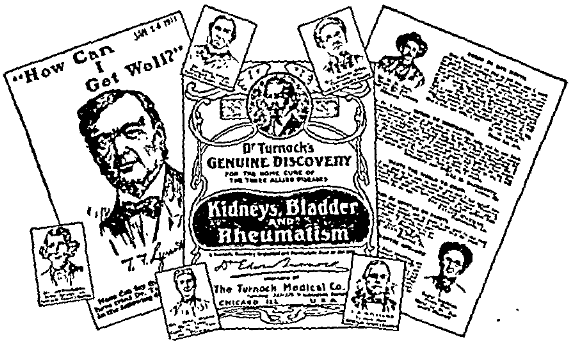

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"In the meantime, in order that you should not be kept waiting, and so that you may have your system nicely prepared for treatment, I enclose herewith a free supply of Dr. Turnock's Genuine Discovery in the form of general specific Uric Acid medication, which will apply to your case for the present in a general way. I will then have completed my regular and confidential diagnosis and found out just exactly what you need in every particular as to ingredients, medications, diet, special advice, etc., so that I can then recommend with sincerity a reliable and accurate personal specific for your cure. I am also anxious to compare your case with others I have treated in the past 25 years."

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"Realizing how necessary it is that you shall begin your cure at once, I have sent the full course of home treatment direct to your address to-day by mail at our expense. This will give you a chance to see what you are getting. Most doctors would ask you for the money first, but that takes time, and you have no time to lose; other doctors send treatment by Express C. O. D., but this is neither honorable nor fair, as you can't see what you are getting and it adds to your expense. So I thought that the Direct Delivery would be the better way, and I know you will agree with me and appreciate it."

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"I have given you endless proof of what the treatment will do for you, have legally guaranteed to cure you and have offered you a treatment that has always sold for five dollars for just three dollars, and if you now want to know about my own and the Company's responsibility—its financial ability to carry out guarantees—then write to the Colonial Trust and Savings Bank, to Chas. J. Grady, or A. E. Fechter, his successor, one of the most prominent druggists in Chicago, to Roberts & MacAvinche, among the best known concerns of its kind in the world, and to your friends who live in Chicago."

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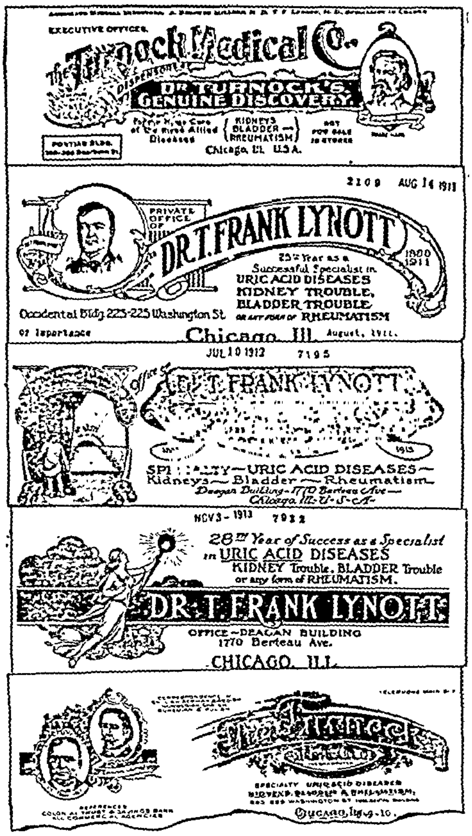
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Dispensers of
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KIDNEYS BLADDER RHEUMATISM
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2109 AUG 14 1911
PRIVATE OFFICE OF
DR. T. FRANK LYNOTT
1880 1911
25th Year as a Successful Specialist in URIC ACID DISEASES KIDNEY TROUBLE, BLADDER TROUBLE or any form of RHEUMATISM
Occidental Bldg 225-225 Washington St.
Chicago, Ill. August, 1911.
JUL 10 1912 7195
Office of DR. T. FRANK LYNOTT
1913
URIC ACID DISEASES — Kidneys — Bladder — Rheumatism
Deagan Building - 1770 Berteau Ave — Chicago Ill. U. S. A.
NOV 3 - 1913 7932
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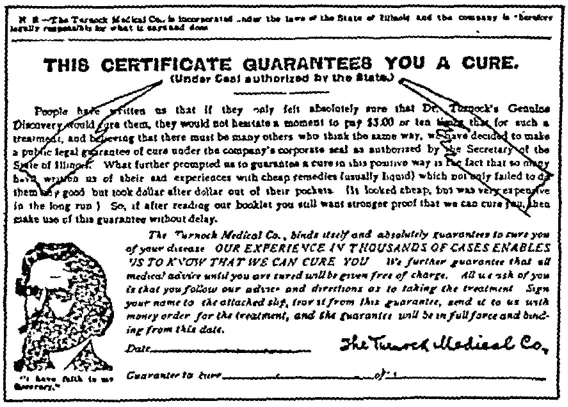

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THIS CERTIFICATE GUARANTEES YOU A CURE.
(Under Seal authorized by the State.)

People have written us that if they only felt absolutely sure that Dr. Turnock's Genuine Discovery would cure them, they would not hesitate a moment to pay $3.00 or ten times that for such a treatment, and believing that there must be many others who think the same way, we have decided to make a public legal guarantee of cure under the company's corporate seal as authorized by the Secretary of the State of Illinois. What further prompted us to guarantee a cure in this positive way is the fact that so many have written us of their sad experiences with cheap remedies (usually liquid) which not only failed to do them any good but took dollar after dollar out of their pockets. (It looked cheap, but was very expensive in the long run.) So, if after reading our booklet you still want stronger proof that we can cure you, then make use of this guarantee without delay.

The Turnock Medical Co., binds itself and absolutely guarantees to cure you of your disease OUR EXPERIENCE IN THOUSANDS OF CASES ENABLES US TO KNOW THAT WE CAN CURE YOU We further guarantee that all medical advice until you are cured will be given free of charge. All we ask of you is that you follow our advice and directions as to taking the treatment Sign your name to the attached slip, tear it from this guarantee, send it to us with money order for the treatment, and the guarantee will be in full force and binding from this date.

*Date*________________ The Turnock Medical Co.

*Guarantee to cure*________________ *of*________________

"I have faith in my discovery."

Every fraudulent mail-order concern issues a certificate guaranteeing either a cure or a return of your money; the Turnock Company was no exception. Here is a reduced reproduction of the Turnock Medical Company's "guarantee certificate." Note the impression the concern attempted to give that the guarantee was authorized by the State.

"Mr. Read claims that he purchased the business from Katz in May for a consideration of $125,000, represented by twenty-five notes payable over a period of about one year. Mr. Read admitted that the net receipts of the business for the year preceding the alleged sale were approximately $70,000, that the stock is on deposit as security for the notes; that there was an understanding that the notes were to be allowed to run at interest after maturity if not paid at that time; that a report is made each month relative to the business by Read to Katz, and that they have had a number of interviews since the alleged transfer although Katz has since then been a resident of New York. On the advice of counsel, Mr. Read declined to produce any of the monthly reports which he has made to Katz. Read admitted further that he draws from the business as a salary, $10,000 a year. It is apparent that Katz has retained more or less of an influence and interest in the conduct of the business."

ALL "TREATMENTS" THE SAME

The postal inspectors who investigated the Lynott fraud submitted under assumed names a number of the symptom

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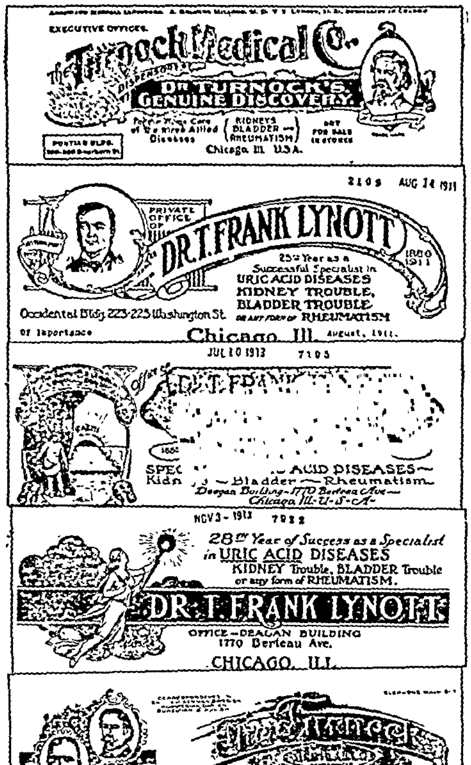
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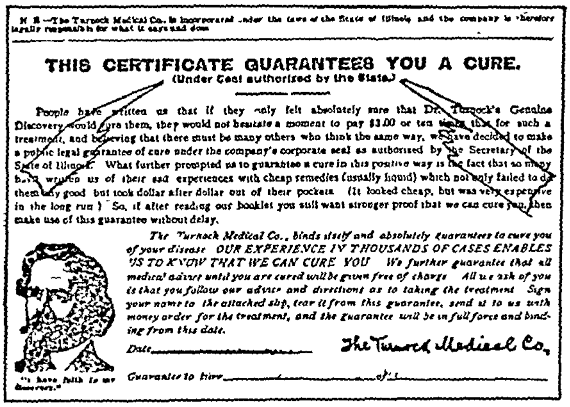

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THIS CERTIFICATE GUARANTEES YOU A CURE.
(Under Seal authorized by the State.)

People have written us that if they only felt absolutely sure that Dr. Turnock's Genuine Discovery would cure them, they would not hesitate a moment to pay $3.00 or ten times that for such a treatment, and believing that there must be many others who think the same way, we have decided to make a public legal guarantee of cure under the company's corporate seal as authorized by the Secretary of the State of Illinois. What further prompted us to guarantee a cure in this positive way is the fact that so many have written us of their sad experiences with cheap remedies (usually liquid) which not only failed to do them any good but took dollar after dollar out of their pockets. (It looked cheap, but was very expensive in the long run.) So, if after reading our booklet you still want stronger proof that we can cure you, then make use of this guarantee without delay.

The Turnock Medical Co., binds itself and absolutely guarantees to cure you of your disease. OUR EXPERIENCE IN THOUSANDS OF CASES ENABLES US TO KNOW THAT WE CAN CURE YOU. We further guarantee that all medical advice until you are cured will be given free of charge. All we ask of you is that you follow our advice and directions as to taking the treatment. Sign your name to the attached slip, tear it from this guarantee, send it to us with money order for the treatment, and the guarantee will be in full force and binding from this date.

Date ______________ The Turnock Medical Co.

Guarantee to him ______________ *of* ______________

"I have faith in my discovery."

Every fraudulent mail-order concern issues a certificate guaranteeing either a cure or a return of your money; the Turnock Company was no exception. Here is a reduced reproduction of the Turnock Medical Company's "guarantee certificate." Note the impression the concern attempted to give that the guarantee was authorized by the State.

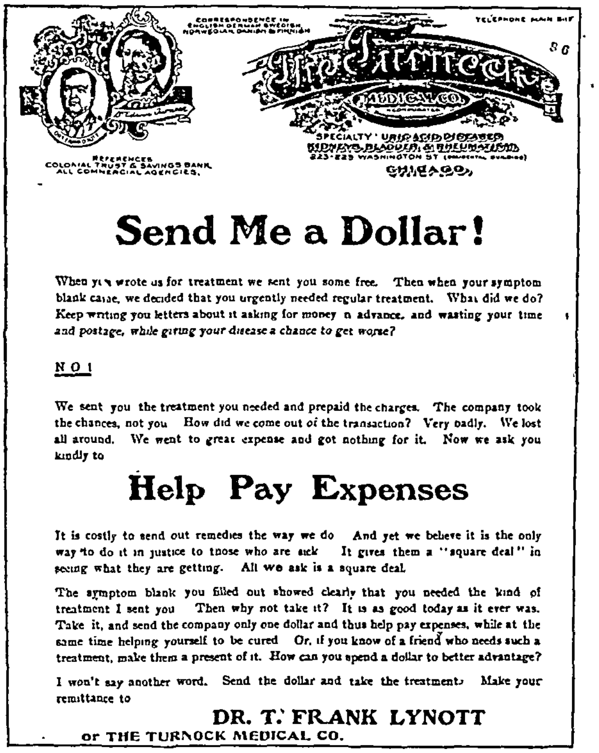
"Mr. Read claims that he purchased the business from Katz in May for a consideration of $125,000, represented by twenty-five notes payable over a period of about one year. Mr. Read admitted that the net receipts of the business for the year preceding the alleged sale were approximately $70,000, that the stock is on deposit as security for the notes; that there was an understanding that the notes were to be allowed to run at interest after maturity if not paid at that time; that a report is made each month relative to the business by Read to Katz, and that they have had a number of interviews since the alleged transfer although Katz has since then been a resident of New York. On the advice of counsel, Mr. Read declined to produce any of the monthly reports which he has made to Katz. Read admitted further that he draws from the business as a salary, $10,000 a year. It is apparent that Katz has retained more or less of an influence and interest in the conduct of the business."

ALL "TREATMENTS" THE SAME

The postal inspectors who investigated the Lynott fraud submitted under assumed names a number of the symptom coupons from the Turnock advertisements checking different symptoms. They, in common with others who answered advertisements, received the regular follow-up letters, the "free trial treatment" of pills and the unasked for, "full course of home treatment." On this point the assistant attorney-general said:

"The evidence shows that the treatment sent in all of these cases was the same, and consisted of well-known drugs which are sometimes prescribed by physicians as diuretics, expectorants, stimulants and cathartics, dependent on the conditions present in each individual case. The 'free treatment' consisted of the same medicine, but in smaller quantity. The medicine thus sent out is intended for the elimination of excessive uric acid from the system, and is of some value for this purpose when prescribed in accordance with the individual requirements of each case.

"That the symptoms set forth above may arise from a number of causes is such a well-recognized fact as hardly to require expert testimony to prove. However, the physicians who were present at the hearing were examined on this point, and they agreed that none of these symptoms, taken alone or in combination with any or all of the others necessarily indicated an excess of uric acid in the system but might be due to other conditions requiring treatment of another kind. On this point there was no contrariety of evidence. While the physicians who appeared voluntarily at the request of this office asserted that there were many other causes of these symptoms just as common, if not more so, than excessive uric acid, the experts employed by the respondents stated that, although there were many *other causes. excessive uric acid was the most common.* In view of their admission, however, that there are many other causes, it follows that even on this theory, excessive uric acid is the cause in only a small percentage of the cases. The physicians called by this office also testified that some of the diseases represented by these symptoms were incurable and others curable only by a surgical operation, and that the applicability of this medicine in any case where the symptoms were in fact due to excess of uric acid was dependent on the conditions present in each individual case. Whether, then, this treatment would be of any value whatsoever in any case where prescribed in accordance with this system is entirely a matter of chance. I am satisfied from the evidence that all of the above facts were at all times well known to the respondents.



CORRESPONDENCE IN ENGLISH GERMAN SWEDISH NORWEGIAN DANISH & FINNISH

TELEPHONE MAIN

86

The Turnock Medical Co.

SPECIALTY: URIC ACID DISEASES KIDNEYS, BLADDER, & RHEUMATISM

223-225 WASHINGTON ST

CHICAGO.

REFERENCES
COLONIAL TRUST & SAVINGS BANK.
ALL COMMERCIAL AGENCIES.

Send Me a Dollar!

When you wrote us for treatment we sent you some free. Then when your symptom blank came, we decided that you urgently needed regular treatment. What did we do? Keep writing you letters about it asking for money in advance, and wasting your time *and postage, while giving your disease a chance to get worse?*

N O !

We sent you the treatment you needed and prepaid the charges. The company took the chances, not you How did we come out of the transaction? Very badly. We lost all around. We went to great expense and got nothing for it. Now we ask you kindly to

Help Pay Expenses

It is costly to send out remedies the way we do And yet we believe it is the only way to do it in justice to those who are sick It gives them a "square deal" in seeing what they are getting. All we ask is a square deal.

The symptom blank you filled out showed clearly that you needed the kind of treatment I sent you Then why not take it? It is as good today as it ever was. Take it, and send the company only one dollar and thus help pay expenses, while at the same time helping yourself to be cured Or, if you know of a friend who needs such a treatment, make them a present of it. How can you spend a dollar to better advantage?

I won't say another word. Send the dollar and take the treatment. Make your remittance to

DR. T. FRANK LYNOTT
OF THE TURNOCK MEDICAL CO.

Photographic reproduction, greatly reduced, of the last of the follow-up series in which Lynott offered to take one dollar for the treatment for which he first asked three dollars. If this offer were not accepted it did not pay Lynott to send the four cents postage necessary for the return of the pills.

REPRESENTATIONS FALSE AND FRAUDULENT

"I *therefore find that the above* representations calculated to lead the reader to believe that, if he is suffering from any of the symptoms set forth in the advertisement, he is in need of the medicine offered by this company; that the company can and will diagnose the disease from which the addressee of the form-letters is suffering, by this system; that it has determined the disease or diseases from which the addressee is suffering; that it has determined that the addressee is curable, and that it knows that the medicine is suited to the case—are all false and fraudulent. I also find that the representations contained in the advertisement *calculated to lead the reader to believe* that he may obtain free a remedy for his disease is a fraudulent device intended to induce the sending to the company of names and addresses without making the promised return therefor, but instead thereafter advising the writer in effect that the remedy necessary for his cure must be paid for. I also find from the evidence that this treatment prescribed in this way is not of the efficacy represented in the advertising matter of this concern, and that it is in fact not different from, or better than, other treatments used for the same purpose."

NOT A MATTER OF OPINION

Like every quack and every exploiter of fraudulent "patent medicines" when caught in the net of the law the argument was advanced that the curative value of the Turnock Treatment was a matter of "opinion." To quote again from the attorney-general's memorandum:

"In argument and in his brief, Mr. Haynes insists that the question in this case is a question of opinion, and therefore not a proper question for the Postmaster-General to determine one way or the other. The question in the case is *not,* however, as he assumes, *whether or not this medicine* will cure or benefit conditions due to excess of uric acid, but whether or not the company makes false and fraudulent representations of fact in order to accomplish the sale of the medicine; and that it does so is, in my opinion, clearly shown by the evidence. The inevitable result of the system followed by this company in its treatment of disease is the defrauding of a large number of people out of money which they can ill afford to lose for drugs for which they have no need, and in a great many cases a resultant postponement of proper treatment, in some instances until too late."

In view of these facts Judge Lamar reported to Postmaster-General Burleson:

"I find that this is a scheme for obtaining money and property through the mails by means of false and fraudulent pretenses, representations and promises, in violation of Sections 3929 and 4041 of the Revised Statutes, as amended; and therefore recommend that a fraud order be issued against the parties named in the caption of this memorandum."

As previously stated, the mails were closed to the Turnock Medical Company and Dr. T. Frank Lynott on May 6, 1914.

[A business that brings in $350,000 a year is, it seems, not one to be abandoned without a fight. The Chicago papers announce, as we go to press, that the Turnock Medical Company has filed a petition for injunction to prevent the enforcement of the fraud order.]

The Average Mind.—The perfect physical form in man or woman is much more sought than found. The perfect mental form is even more rare. The best to hope for in the average man, from nature and nurture, is to have a right judgment in all things. In how few of us is this consummation reached! One philosopher made the comforting remark that "every man has a sane spot somewhere." Burton, in his survey of humanity in the famous "Anatomy of Melancholy," concludes that the whole world is mad, and needs a journey to Anticyra (where the best hellebore, a specific against madness, was grown).—Osler: Specialism in the General Hospital.

Correspondence

Some Statistics Concerning the Academic Careers of Medical Students

To the Editor:—The records of state board examinations, while they give an excellent idea of certain end-results obtained in the medical schools of this country, convey no hint of what might be termed the academic morbidity and mortality. Like a case of well-developed chronic disease, they represent merely the terminal stages, and there is no way of tracing through them the various metamorphoses that resulted in the finished product. The following figures are based on the records of the students entering the Yale Medical School from 1896 to 1908. They cover a period during which the requirements for admission were changing, and this gives an opportunity to compare students who were prepared to enter the medical school under different systems as to their capacity to grasp the subject of medicine and to pass through the medical school with or without conditions. Of the 518 students whose records were analyzed, 52.8 per cent. were graduates of high or preparatory schools; 16.2 per cent. entered on examination; 14.6 per cent. had spent from one to three years in colleges or scientific schools, and 16.2 per cent. were graduates of colleges or scientific schools.

Of this entire number, 58.8 per cent. graduated from the Yale Medical School, 85.9 per cent. of them in the minimum required period; 11.8 per cent. in one year more, and 2.2 per cent. in two years more than the minimum required period. These figures possess a certain interest on account of the different attitude toward graduation which is taken in European countries and in the United States. In Great Britain—if we may judge from the report of Mr. Hallett—it is expected that a considerable proportion of medical students will not graduate in the minimum required period of study. On the Continent of Europe, too, it does not appear to be regarded as disgraceful for a student to fail in his first attempt to obtain a degree, and the course may be voluntarily extended beyond the minimum required period. In this country, however, a certain stigma seems to attach to the individual who fails to obtain his degree in the minimum time of study required. It is a grave question whether this is not a distinctly fallacious attitude, largely because it fails to take into account the fact that there is a marked disparity in the capabilities of different men, even though they have equivalent preliminary training, to master in a fixed time the essentials of a difficult subject like medicine. On the other hand, it seems possible that the European attitude of allowing a man to continue studying year after year, even though he appears to lack the mental attainments necessary for the mastery of medicine, is perhaps too liberal an attitude, and not conducive to the best interests of the students or of the profession.

STATISTICS REGARDING 305 GRADUATES OF YALE MEDICAL SCHOOL

Preliminary Qualifications	Time Required to Graduate			Honor Winners				Completed Course Without Conditions
	4 Years	5 Years	6 Years	All Kinds	Cum Laude	Gold Medal	Keese Prize	
Grads. of High Schools.	81.6	15.0	3.4	12.6	8.6	5.4	2.8	44.8
Entered on Examination	86 0	11.7	2.3	18.6	18.6	6.9	2.3	46.5
1 to 3 Years of College.	89.2	10.8	...	28.5	25.0	14.8	7.1	53.5
College Graduates......	96.7	3.3	...	42.6	36.0	11.8	9.8	65.5

Comparing the four groups of students with regard to their ability to complete their medical course in the minimum required time, it is found that 81.6 per cent. of the high-school graduates, 86 per cent. of those entering on examination, 89.2 per cent. of the college undergraduates, and 96.7 per cent. of the college graduates completed the course in the minimum amount of time. None of the college undergraduates or graduates took more than an extra year to obtain a degree, while 3.4 per cent. of the high-school graduates, and 2.3 per cent. of the students entering on examination took two extra years to do so.

It is interesting to compare the record of the different types of entrants with regard to the obtaining of honors, prizes or honorable mention. Of the total number of graduates, 20.9 per cent. obtained one of these forms of distinction, and of this group 12.6 per cent. were entrants from high schools; 18.6 per cent. entrants on examination; 28.5 per cent. undergraduates of colleges, and 42.6 per cent. graduates of colleges. The distinction awarded in this school are the *cum laude* degree, the conferring of which is based on the entire record of the student; the Campbell gold medal, which is given the student having the highest marks for the complete course, and the Keese prize for the best thesis, which is not usually awarded unless theses containing original work are submitted. So far as the *cum laude* awards are concerned, 8.6 per cent. of the high-school entrants who graduated received the *cum laude*, 18.6 per cent. of those entering on examination, 25 per cent. of the college undergraduates, and 36 per cent. of the college graduates. The Campbell gold medal was won by high-school entrants in 5.4 per cent., by those entering on examination in 6.9 per cent., by college undergraduates in 14.8 per cent., and by college graduates in 11.8 per cent. The Keese prize was won by high-school entrants in 2.8 per cent., by those entering on examination in 2.3 per cent., by college undergraduates in 7.1 per cent., and by college graduates in 9.8 per cent. These figures bring out several suggestive points, of which two stand out rather prominently: (1) the success of men entering on examination over the high-school entrants in obtaining the *cum laude* degree, and (2) the great preponderance of college undergraduates and college graduates among those who won the Keese prize, which, as stated, is based on evidence of ability to do research work. The success of the examination entrants is probably due to the fact that many of them were unusually earnest students who had overcome their defects in preliminary education by determined work and who exhibited the same quality of determination in their work as medical students.

Of the total number of students who graduated from the institution, only 50.1 per cent. passed through their entire course without conditions, and here, again, the college undergraduates and college graduates furnished the largest percentage of successful students; 65.5 per cent. of the college graduates and 53.5 per cent. of the college undergraduates passed through without conditions, while only 44.8 per cent. of the high-school graduates, and 46.5 per cent. of those entering on examination were able to do this.

The migration of students who had no conditions to other schools was comparatively small among the high-school and examination entrants, and large among the college undergraduates and graduates. Only 2.5 per cent. of the unconditioned high-school entrants, and 4.7 per cent. of the unconditioned examination entrants went to other schools, while 38.1 per cent. of the college undergraduates, and 14.2 per cent. of the college graduates went elsewhere. This state of affairs is largely due to local conditions, more especially to the existence of the so-called "combined course" in connection with Yale College. As a result of the existence of this course, many men who entered Yale College with the idea of studying medicine, or who resolved to study medicine during their college course, elected the first two years of medicine during their third and fourth college years, and received the A.B. degree at the end of their second year in medicine. Having already spent four years in New Haven, and doubtless influenced to some extent by the supposed paucity of clinical material here as compared to the larger centers, these college men migrated in considerable numbers at the end of their preclinical years.

The number of students who originally entered this institution but subsequently obtained their M.D. degree elsewhere, was 14.8 per cent. of the total entrants, and of this number 46.7 per cent. left here with either past or existing conditions. The number who failed to obtain the M.D. degree elsewhere—so far as can be discovered from an examination of the medical directories—was 26.2 per cent. of the total number of entrants. It would appear from these figures that, roughly speaking, three-fourths of those men who attempt to obtain a medical degree succeed in doing so. This percentage of success, however, is obtained only by the migration of a considerable number of poor students to schools with low standards. It is probable that in many of the poorer medical schools almost all of the student immigrants are of this class. The fact that a considerable proportion of the emigration from this school has not been of this type is due entirely to the local conditions which have already been discussed.

In a general way, these statistics show that the man with college training has a very decided advantage in the study of medicine. It hardly needed figures to show this, but it is of interest to note that figures bear it out. They also suggest that some provision should still be made so that the unusual man, whose preliminary education has not conformed to the set standards, may have opportunity to study medicine without being forced into the low-grade medical school. They suggest that satisfactory provision for the freer migration of medical students is desirable. From experience with a very considerable number of migrants, I believe that a free interchange—at any rate among schools rated in the same class—should be encouraged in the case of good students. These should be allowed to pass from school to school without having to submit to harassing red tape. On the other hand, the migration of lame ducks from one school to another should be discouraged. It is true that the state board examinations weed out the incompetents, but it hardly seems right to allow a person who is obviously unable to meet the requirements of an exacting profession like medicine to spend years in costly preparation only to find himself disbarred from practicing his profession at the end of his period of preparation. It is both kinder and juster to such persons to discourage them during their career as medical students, and while such a policy must of necessity result in occasional mistakes and injustice, it is, we believe, the most desirable one both from the points of view of the medical student, the profession and the public.

George Blumer, M.D., New Haven, Conn.,
Dean, Medical Faculty, Yale University.

A Plea for Certain Medical Officers of the U. S. Army

To the Editor:—The act of Congress approved April 23, 1908, provides for a Medical Reserve Corps of the U. S. Army, and the appointment thereto of the contract surgeons who were then in the service and received the recommendation of the Surgeon-General. The officers so appointed are debarred by this law from retirement, and by various decisions of the War Department and the Attorney-General of the U. S., from receiving credit for their former service as contract surgeons in reckoning longevity pay.

By the act approved March 3, 1911, Congress has granted to the dental surgeons the right to retirement on account of age or disability, as in the case of other officers and credit for time served as contract dental surgeon in computing increased service pay.

The functions of the Medical Corps and the Medical Reserve Corps are one and the same, and the many varied and complex duties which the officers in each corps are required to perform are alike. In spite of the status of the officer in the Medical Reserve Corps, he has the same spirit and pride to uphold the honor and dignity of the profession, to render to his country service of a high standard of excellence and to maintain social consideration; and to the performance of his duties he dedicates himself with the same zeal, industry and faithfulness as his colleagues in the Medical Corps.

The law under which the medical department of the U. S. Army was reorganized in 1908 does the greatest injustice to the officers of the Medical Reserve Corps. They are the only commissioned officers in the Army denied the privilege of retirement. The law relative to the dental surgeon is a good one, a step in advance. He does not get more than he deserves. But comparing service, it is believed that a longer stride should have been made by Congress, with the same effort, and equal provision made for the officer in the Medical Reserve Corps, as he surely is entitled to and should receive the same privileges of retirement for disability or age as the dental surgeon and other officers of the Army.

Do the distinguished gentlemen on the inactive list of the Medical Reserve Corps realize that when they are called to active duty and respond (as they will do), they may be wounded in battle or be incapacitated from disease and rendered physically unable to resume the lucrative practice which they have patriotically relinquished to serve their country, and if such an unfortunate event should occur, the most they could hope for is a meager pension?

The existing law specifically states that no officer of the Medical Reserve Corps shall be entitled to retirement pay (Section 9, Act of April 23, 1908); yet their colleagues in the regular Medical Corps, and dental surgeons, even though just commissioned, are entitled to and will receive retirement under such conditions.

It is believed that the officers of the Medical Reserve Corps, when on the active list, should be accorded the right to retirement on account of age or disability, as in the case of other officers, including dental surgeons, chaplains, veterinarians and pay-clerks; and credit for former services as acting assistant surgeon and contract surgeon in computing increased service pay, the same as is now authorized by law for the dental surgeons.

The following form of a bill should, it is thought, meet the approval of all medical reserve corps officers, whether or not on the active list, as being a fair and justifiable request for the necessary legislation, to place the M. R. C. officer on equality with the dental surgeon.

A BILL TO PROVIDE FOR THE RETIREMENT AND LONGEVITY PAY FOR CERTAIN MEDICAL OFFICERS OF THE U. S. ARMY

Be it enacted by the Senate and House of Representatives of the United States of America, in Congress assembled, That hereafter officers of the Medical Reserve Corps, U. S. Army, on the active list, shall have the right to retirement for age or disability as in the case of other officers.

Sec. 2. That former service as acting assistant surgeon or contract surgeon shall be reckoned in computing the increased service pay of officers on the active list of the Medical Reserve Corps of the Army.

Sec. 3. That all acts or parts of acts in conflict with the provisions of this act are hereby repealed.

F. M. Wall, M.D., Fort Lawton, Wash.

Housing and Sanitation

To the Editor:—Permit me as a member of the American Public Health Association to congratulate you on the editorial which appeared in The Journal, May 9, 1914, p. 1479, on this subject. As the medical adviser of the Canadian Commission of Conservation, I believe most fully in the importance of public health work being carried into the homes of our people. We as sanitarians have been devoting too much work to "the outside of the platter" and must get busy on the inside. Both fields must be worked, but the inside of the home is as an untrodden field. It is, however, the one in which our best work can and should be done.

We have pushed forward medical inspection of schoolchildren, which in the main simply is curative of the ills consequent on the neglect by health authorities of home sanitation in its widest sphere. I am convinced that if health authorities would but enter into this domain, the result would be that the cost of school inspection would be minimized and healthier children would be sent to our schools when the age of tuition begins. This is the proper kind of medical inspection of children.

From a public health point of view, such factors as race influence, eugenics, occupation, poverty, high cost of living and many others have to be considered; but the health of the home and all that it means for life and death is an outstanding factor which seems to have been lost sight of because it has been neglected.

Charles A. Hodgetts, M.D., Ottawa, Canada.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

RECIPROCAL RELATIONS OF PENNSYLVANIA

To the Editor:—With what states does Pennsylvania have reciproca relations?
C. L. N.

Answer.—Arkansas, California, Colorado, Delaware, District of Columbia, Georgia, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Michigan, Minnesota, Missouri, Nebraska, Nevada, New Jersey, New Mexico, North Carolina, Ohio, Vermont, Virginia, West Virginia, Wisconsin and Wyoming.

MASTITIS IN MUMPS—INFLUENCE OF DRUGS ON THE MAMMARY GLANDS

To the Editor:—If mastitis develops as a complication of mumps, does it usually impair the function of the glands later?

2. If so, what is the best treatment?

3. What preparations or measures will stimulate the glandular activity of the mammary glands?

C. B. Creech, M.D., Middleburg, Ky.

Answer.—1. No. We find no reference to such effects and conclude that they must be unknown or extremely rare.

2. Ordinarily symptomatic treatment for ordinary mastitis.

3. It is doubtful whether any drugs have an influence on the mammary glands. The extract of the pituitary gland has been recommended as a stimulant to the secretion of milk, but the evidence as to this is not conclusive.

THE PLACENTIN SKIN REACTION IN PREGNANCY

To the Editor:—Can you give me the technic for Engelhorn and Wintz's skin reaction in pregnancy as abstracted in The Journal, May 9, 1914, p. 1514? The method of preparation of placentin is particularly wished.
Kenneth M. Lynch, M.D., Charleston, S. C.

Answer.—The method of preparation of placentin is not given in the paper abstracted, which is the only publication on this subject. The authors assert that they wish to perfect the method before giving a complete description. Inoculation is made in the same way as is the tuberculin reaction of von Pirquet, and the reaction is most completely developed by thirty-six hours after the inoculation. It consists of inflammatory swelling and reddening with a light-brown discoloration of the surrounding skin..

BOOKS ON HYGIENE AND SANITATION

To the Editor:—Can you recommend a good practical book on hygiene and sanitation that would cover the duties of a medical officer in a semitropical town of 15,000 population?
Charles Hardwicke, M.D., Hospital "El Aguila," Minatitlan, V. C., Mexico.

Answer.—Harrington's "Practical Hygiene," published by Lea & Febiger, Philadelphia, price $4.50, and Rosenau's "Preventive Medicine and Hygiene," published by D. Appleton & Co., New York, price $6, are excellent works. Readers of German may consult R. V. L. Abel's "Handbuch der Praktischen Hygiene," published by G. Fischer, Jena, 1913, two volumes.

DOSAGE OF TYPHOID VACCINE FOR CHILDREN

To the Editor:—Please give me the accepted dose of typhoid vaccine for children.
C. A. Shore, M.D., Raleigh, N. C.

Answer.—The dosage of typhoid vaccine for children is given by Frederick F. Russell in The Journal, Feb. 1, 1913, page 344, as follows:

"The dosage is based altogether on body-weight and not on age. The child is given that portion of the adult dose which his weight bears to the average adult weight, 150 pounds. If the fraction proves inconvenient, a little more, rather than less, is administered. As with adults, the best time for inoculation is 4 o'clock, or later, in the afternoon, since any reaction will then come after bedtime."

Medical Education and State Boards of Registration

COMING EXAMINATIONS

California: Los Angeles, June 16. Sec., Dr. C. B. Pinkham, 135 Stockton St., San Francisco.

Delaware: Dover and Wilmington, June 16-18. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

Florida: Palatka, June 17-18. Sec., Dr. E. W. Warren, Palatka.

Georgia: Atlanta and Augusta, June 3. Sec., Dr. C. T. Nolan, Marietta.

Iowa: Iowa City, June 11-13. Sec., Dr. Guilford H. Sumner, State House, Des Moines.

Kansas: Kansas City, June 9-12. Sec., Dr. H. A. Dykes, Lebanon.

Kentucky: Louisville, June 3-5. Sec., Dr. A. T. McCormack, Bowling Green.

Louisiana: New Orleans, June 4-6. Sec., Dr. E. L. Leckert, Macheca Bldg., New Orleans.

Maryland: Baltimore, June 15. Regular Board: Sec., Dr. J. McP. Scott, Hagerstown. Homeopathic: Baltimore, June 15. Sec., Dr. O. N. Duvall, 1817 N. Fulton Ave., Baltimore.

Michigan: Ann Arbor, June 9. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

Minnesota: Minneapolis, June 2-5. Sec., Dr. Thomas S. McDavitt, 814 Lowry Bldg., St. Paul.

Mississippi: Jackson, June 16-17. Sec., Dr. E. H. Galloway, Jackson.

Missouri: St. Louis, June 15-17. Sec., Dr. J. A. B. Adcock, Jefferson City.

Montana: Helena, June 30-July 2. Sec., Dr. Wm. C. Riddell, Helena.

Nebraska: Lincoln, May 27. Sec., Dr. H. B. Cummins, Seward.

New Hampshire: Concord, July 1-2. Regent, Mr. H. C. Morrison, Concord.

New Jersey: Trenton, June 15-16. Sec., Dr. H. G. Norton, 429 E. State St., Trenton.

New York: June 23-26. Chief of Examinations Division, Mr. Harlan H. Horner, Department of Education, Albany.

North Carolina: Raleigh, June 9. Sec., Dr. Benj. K. Hays, Oxford.

Ohio: Columbus, June 2-5. Sec., Dr. George H. Matson, State House, Columbus.

Pennsylvania: Philadelphia, June 1-3. Sec., Mr. Nathan C. Schaeffer, Harrisburg.

Rhode Island: Providence, July 2-3. Sec., Dr. Gardner T. Swarts, State House, Providence.

South Carolina: Columbia, June 9. Sec., Dr. A. Earle Boozer, 1802 Hampton Ave., Columbia.

Texas: Austin, June 23-25. Sec., Dr. W. L. Crosthwait, Waco.

Virginia: Richmond, June 23-26. Sec., Dr. Herbert Old, Norfolk.

West Virginia: Elkins, July 1. Sec., Dr. S. L. Jepson, Wheeling.

Wisconsin: Milwaukee, June 29. Sec., Dr. John M. Beffel, 3200 Clybourn St., Milwaukee.

Wisconsin Reciprocity Report

Dr. John M. Beffel, secretary of the Wisconsin State Board of Medical Examiners, reports that 51 candidates were licensed through reciprocity from June 24 to Oct. 1, 1913. The following colleges were represented:

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Howard University	(1910)	Oklahoma
Bennett Medical College	(1911) (1912) (1912) (1912)	Illinois; Illinois; Illinois; Illinois.
Chicago Coll. of Med. and Surg.	(1912) (1912)	Illinois; Illinois
Chicago College of Phys. and Surgs	(1902) (1910) (1910) (1911)	Illinois; Illinois; Illinois; Illinois.
Hahnemann Med. Coll. and Hosp. of Chicago	(1908) (1910) (1912)	Illinois; Illinois; Illinois.
Northwestern Univ. Med. School	(1904) (1905) (1907) (1912)	Illinois; Illinois; Illinois; Illinois.
Rush Medical College	(1885) (1898) (1908) (1909) (1910) (1912)	Minnesota; Minnesota; Illinois; Illinois; Minnesota; Illinois.
University of Illinois	(1907)	Illinois
Indiana University	(1911)	Indiana
Louisville Medical College	(1907)	Kentucky
University of Louisville	(1900)	Kentucky
Johns Hopkins University	(1905)	Maryland
University of Maryland	(1906) (1906)	Maryland; Connecticut
Tufts College Medical School	(1908)	Ohio
Detroit College of Medicine	(1893)	Michigan
University of Michigan, Dept. of M. & S.	(1909) (1909) (1912)	Michigan; Michigan; Michigan.
Hamline University	(1901) (1901)	Minnesota; Minnesota
University of Minnesota	(1892) (1904)	Minnesota; Minnesota
Barnes Medical College	(1897)	Colorado
St. Louis Coll. of P. & S.	(1902) (1909)	Missouri; Arkansas
Columbia University, College of P. and S.	(1878)	Minnesota
Miami Medical College	(1901)	Illinois
University of Pennsylvania	(1895) (1895) (1899)	Pennsylvania; Pennsylvania; Pennsylvania.
Woman's Medical College of Pennsylvania	(1909)	Penna.
Meharry Medical College	(1910)	Tennessee
Marquette University	(1911)	Wyoming

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Miscellany

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5. A dressing-station for slightly wounded is entirely unnecessary. The regimental aid stations should dress all these men and send them back to the firing-line. A separate divisional station divides the personnel and confuses the wounded.
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7. Perforating wounds of the cranium are very serious, require much care and in nearly 50 per cent. of cases result in death.
8. Perforating wounds of the thorax by small-caliber bullets are not usually serious. They are generally easy to handle and about 90 per cent. of them will end in recovery.
9. Perforating wounds of the abdomen are not so fatal as has been believed. With the minute modern missile, nearly always at long range, the abdomen is often perforated without serious damage. These cases require little attention and 50 per cent. of the patients will recover — if not meddled with.
10. Fractures of the femur are very difficult to treat in the field. Many will become infected and the ultimate results will be bad. They should not be treated in the field but should be removed early before the bone begins to unite. Wounds of the knee are also serious. Fractures of the bones of the leg give little trouble.

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The plaintiff had arranged with the defendant to attend his wife in childbirth. One night the defendant was summoned, pronounced the pains false, and went home. When called again next morning by telephone, he replied that he could not come, but would send another physician, a Dr. Hardin. The court is of the opinion that, even though it should be conceded that common carriers in furnishing a physician to treat injured passengers, etc., and persons rendering gratuitous services in employing a physician to attend on a sick or injured person are only required to exercise ordinary care to select a skilful and competent physician, yet, under the facts of this case, the duty of the defendant to furnish the plaintiff a physician to attend on his wife possessing that degree of knowledge, skill, and care which physicians practicing in that city and vicinity possessed, was absolute. If it could be said that Dr. Hardin was not an assistant of the defendant in the treatment of the plaintiff's wife, and was not a general partner of the defendant in the practice of medicine, yet that he was a special partner in the treatment of the case, or was acting under his employment to do so, could not very well be gainsaid. At any rate, the defendant, being a physician himself, and having by contract undertaken the treatment of Mrs. Lee, and having secured the services of Dr. Hardin to relieve himself of the necessity of attending her himself and to serve his own interests, the defendant would not be allowed to say that, in such case, the duty resting on him in the selection of a substitute physician was simply that of ordinary care.

Whether the plaintiff was under the influence of intoxicating liquors and exhibited a pistol in such a threatening manner towards Dr. Hardin while he was waiting on the plaintiff's wife as to alarm or excite Dr. Hardin to such an extent as that the same contributed to the failure, if any, of the physician to use ordinary care and skill in the treatment of the plaintiff's wife, was an issue made by the evidence, which should have been submitted to the jury for their determination, with instructions that an affirmative finding on it would entitle the defendant to a verdict in his favor.

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Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, June 22-26.

American Academy of Medicine, Atlantic City, June 19-21.
American Climatological Association, Atlantic City, June 19-20.
American Gastro-Enterological Association, Atlantic City, June 22-23.
American Laryngological Association, Atlantic City, May 25-27.
American Laryn., Rhin., and Otol. Society, Atlantic City, June 19-20.
American Medico-Psychological Association, Baltimore, May 26-29.
American Orthopedic Association, Philadelphia, June 18-20.
American Otological Association, Atlantic City, May 27-28.
American Pediatric Society, New London, Conn., May 26.
American Proctologic Society, Atlantic City, June 22-23.
American Society of Tropical Medicine, Boston, May 29-30.
American Therapeutic Society, Albany, May 29-30.
American Urological Association, Philadelphia, June 18-20.
Conf. of State and Prov. Boards of N. America, Washington, June 19-20.
Maine Medical Association, Portland, June 10-11.
Massachusetts Medical Society, Boston, June 9-10.
National Association for the Study of Epilepsy, Baltimore, May 25.
New Jersey Medical Society, Spring Lake, June 29.
North Carolina Medical Society, Raleigh, June 16.
Rhode Island Medical Society, Providence, June 4.
South Dakota State Medical Association, Watertown, May 26-28.

MISSISSIPPI STATE MEDICAL ASSOCIATION

Forty-Seventh Annual Meeting, held at Columbus, April 14-16, 1914

The President, Dr. L. C. Feemster of Tupelo, in the Chair

Acute and Chronic Arthritis

Dr. John B. Elliott, Jr., New Orleans: I have found the classification of Barker of great value in the differential diagnosis of the arthritides. Briefly, it is as follows: (*a*) Arthritis of the severe nervous diseases. (*b*) Arthritis due to gout. (*c*) Arthritis Deformans. (*d*) Arthritis due to infections. (*e*) Chronic primary progressive arthritis (rheumatoid arthritis).

DISCUSSION

Dr. J. S. Ullman, Natchez: Acute rheumatic fever is something we hear a great deal about but rarely see. I think a great many cases spoken of as acute rheumatism or chronic rheumatism, are simply the manifestations of trouble in some other part of the body.

Diagnosis of Early Pulmonary Tuberculosis

Dr. C. H. Cocke, Asheville, N. C.: The means of diagnosis are within the reach of all. We should treat each suspect as though he were tuberculous until we have proved the contrary. Physical examination is all-important. The von Pirquet test is of no great value after the second year of life, unless it be negative.

DISCUSSION

Dr. A. J. Williams, Gulfport: For the past few years, physicians living in the small towns have been in the habit of relying on microscopic examination in order to make a diagnosis. I have often had patients go to another doctor, who would tell them that they did not have tuberculosis. Had the other doctors stripped these patients, I am sure they would not have differed with me.

Public Health or Preventive Medicine

Dr. J. H. Portwood, Kosciusko: Physicians should all serve as the advance-guard of the sanitary army. They should preach the prophylaxis of tuberculosis, typhoid and malaria. They should teach that there is a real danger in measles and that not every patient recovers. They should encourage a general campaign for sexual purity and teach the possibility of physiologic continence.

DISCUSSION

Dr. W. S. Leathers, University: I want to emphasize the paramount importance of proper sewage disposal at the country house. A great deal has been said this afternoon with regard to the prevention of different diseases, typhoid, *tuberculosis*, etc., and yet we find out in the country that over 50 per cent. of the homes have no proper provision for disposing of the waste from the home. In many counties, over 40 per cent. of the schools have no conveniences.

Technic for Operation for Ovarian Cysts

Dr. F. D. Smythe, Memphis, Tenn.: The incision should be a long one. In cases in which the cyst is very large, the patient weak and anemic, with embarrassed respiration and heart action, the operation should be done in two steps: the abdomen should be incised down to the tumor and gauze inserted between the tumor and parietal peritoneum to produce union of surfaces; the cyst may be evacuated a few days later.

DISCUSSION

Dr. J. C. Culley, Oxford: There is one thing which I always advise a beginner to do and that is to make a long *incision, because you can see better how to remove the cyst* without fear of doing damage. Sometimes the peritoneum is adherent to the cyst, and if you are not careful you will go right on into the peritoneum and are apt to have a recurrence. The removal of the cyst is better accomplished by the use of the trocar, and that very slowly. Also, in removal of the cyst intact, the fluid often slips back into the abdominal cavity, and that should be protected with gauze.

Pellagra a Curable Disease

Dr. M. O. Shivers, Colorado Springs, Colo.: Put the patient to bed in a cool, dark room. Diet, climate and arsenic (hypodermatically or intravenously) are our weapons. Remember that the pellagrin, no matter how slight the attack, is seriously ill.

DISCUSSION

Dr. W. L. Little, Wesson: Last summer I treated about fifteen cases. I used sodium cacodylate. Not a patient died.

Dr. A. J. Carter, Ellisville: When shall we be able to say that the patient is cured?

Dr. M. O. Shivers, Colorado Springs, Colo.: My first patients were treated three years ago. So far, out of this first series, I have had no recurrences. They were of the bad class—persons that were vomiting, and had mental symptoms.

Diseases Transmitted by Milk and Milk Products

Dr. W. H. Rowan, Jackson: Milk may be a source of disease by carrying it from cow to man or from man to man, or it may act as a factor because of a diminution or an increase in its inherent qualities. A large percentage of Mississippi dairy cows are tuberculous. When cows respond to the tuberculin test, 41 per cent. will show the bacilli in the milk. Typhoid and scarlet fever and diphtheria are transmitted by milk. Our fly-infested towns, with their notorious disregard of the sanitary privy, are in a bad way. The amount of human excreta drunk and eaten in the average Mississippi town is amazing.

DISCUSSION

Dr. D. M. Malloy, Sulligent, Ala.: Dr. Rowan has stated that bovine tuberculosis can be transmitted from cow to man. This is proved particularly in the Philippine Islands, where the milk-supply is derived almost entirely from the carabao, the water-buffalo. Tuberculosis is almost unknown among these animals. The only cow's milk which reaches the Philippines is the condensed milk which is sterilized and contains no organisms. The fact that the carabao is not susceptible to tuberculosis, the fact that bone tuberculosis is due almost entirely to bovine infection, and the further fact that bone tuberculosis is unknown in the Philippines, would seem to establish that it is transmitted in the milk-supply from cow to man.

Tumors of the Breast

Dr. W. G. Gill, Newton: All tumors of the breast are suspicious and should be treated as cancerous until a competent pathologist has pronounced them benign. The best procedure is to remove them and send them to a pathologist; then it does not make any difference in the prognosis what sort of a report he sends you.

DISCUSSION

DR. M. O. SHIVERS, Colorado Springs, Colo.: It is a mistake to remove any tumor and send it to a pathologist. Statistics have shown that in cases in which the tumor was taken out and the breast left four or five days to be removed, the secondary operation is of no value—that few of these women live; so few that it seems absolutely unnecessary to go back after a pathologist has stated that it is carcinoma. So, if there is anything in a woman's breast to require operation at all, that breast should be removed.

(To be continued)

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Eighth Annual Meeting, held in New York City, April 28-30, 1914

The President, DR. WILLIAM FRANCIS CAMPBELL, Brooklyn, in the Chair

Officers Elected

The following officers were elected: President, Dr. Grover Wende, Buffalo, N. Y.; vice-presidents, Dr. Myron B. Palmer, Rochester; Dr. S. W. S. Toms, Nyack, and Dr. Robert M. Elliott, Willard; secretary, Dr. Wisner R. Townsend, New York, reelected; treasurer, Dr. Alexander Lambert, New York, reelected.

Next place of meeting, Buffalo, April 27, 28 and 29, 1915.

DR. WISNER R. TOWNSEND, the secretary, recommended that the delegates to the American Medical Association be requested to favor the passage of a resolution calling on the Trustees to pay the traveling expenses of the delegates to the meetings of the American Medical Association.

Oration on Surgery: Kinetic Chain for Transformation of Latent Energy

DR. GEORGE W. CRILE, Cleveland, Ohio: If our conclusions are sound, then in the kinetic system we should find an explanation of many diseases, and having found an explanation we may find new methods of combating disease. The organs of the kinetic system are the brain, adrenals, liver, muscles and thyroid. Energy is appropriated by the body from the physical forces of nature that constitute the environment, and this energy is stored in the body in quantities in excess of the need of the moment. It is the function of the organs of the kinetic system to transform the surplus so stored into action and heat as needed. This mechanism of organs produces fever as well as muscular activity, fever being heat generated to combat disease.

Deficiency in one of the organs of the kinetic chain causes alike loss of heat, loss of muscular and emotional action, of mental power, and of the power of combating infection. From this we are able to understand the muscular weakness following fever; we can understand why the senile have neither muscular power nor strong feverish reaction; why long-continued infections produce pathologic changes in the organs constituting the kinetic system. Physical or mental shock caused by pain, fear, rage or exercise causes an impairment of the kinetic system because shock means the transformation of potential energy into heat or action. It is desirable, therefore, that unnecessary or too severe shocks be avoided, and the first step in the avoidance of shocks has been made possible by the knowledge of the kinetic system.

Exophthalmic Goiter and Its Treatment

DR. JOHN ROGERS, New York: The first stage is simple hypertrophy; the second stage is that of more or less hypothyroidism; the third stage is that of hyperthyroidism. After hyperthyroidism comes exophthalmic goiter. If the disease lasts long enough the exophthalmic goiter is followed by a fifth stage, a myxedematous condition. The irregular types of exophthalmic goiter can be grouped into different stages which are prolonged in a given case. As to the prognosis in exophthalmic goiter, over 80 per cent. of deaths occur in the exophthalmic stage rather than in the stage of hyperthyroidism. The apparent cause of thyroid abnormalities is fatigue, a simple hypertrophy which is so common, with multiplication of glandular elements in response to demands put on the thyroid which are greater than the normal organ can supply. The antithyroid serum seems to be the best conservative medical treatment. It should not be preserved in except for a short time. The "hyper" cases can be cured much better by ligation of the vessels. I ligate all four of the thyroid arteries and tie off the tip of each upper pole.

DISCUSSION

DR. MARTIN B. TINKER, Ithaca: The diseased condition is limited chiefly to the thyroid in the early stages of the disease. In many cases physicians allow patients to go on with thyroid trouble until they get a dilated heart or are on the verge of insanity, until they have cirrhotic changes in the kidney and liver and other secondary results, and they are confused by the secondary conditions which arise as the result of the thyroid poisoning. If the disease were recognized early many lives might be saved. I have urged on many occasions that the treatment of hyperthyroidism should be undertaken early before serious trouble has occurred in other parts of the body. Within a year two patients came to me who have since gone to insane asylums. Whether or not the insanity could have been prevented in the early stages if treatment had been undertaken, no one can tell, but there is good reason to believe that if patients were taken early enough they might be saved many of the results which occur later.

DR. T. B. BARRINGER, New York: I generally find in these cases that there has been a history of overwork. In 195 cases the history of overwork has doubled a history of fright in those sudden cases that have developed within a few weeks or a few months. These patients faint without the slightest provocation. In this group there have been various disorders of menstruation, such as delayed menstruation and too frequent menstruation; sometimes profuse menstruation has been complained of more than amenorrhea. A large percentage of this group have had the infectious diseases. A proportion of them have had adenoids and enlarged tonsils, and appendicitis. A high percentage of them are anemic. The early cases can be cured by prescribing prolonged rest.

Value of the Various Tests for Determining Functional Activity of Kidney

DR. JAMES N. VANDER VEER, Albany: The so-called phlorizin test is too sensitive. Phlorizin indicates the amount of kidney parenchyma which is capable of functionating. As to the methylene-blue test, only 50 per cent. of the drug is excreted, and it appears as chromogen in the urine, requiring the use of acetic acid and boiling to demonstrate it at this time. This test is too prolonged to be used advantageously. Letters received from 150 surgeons show that from 60 to 70 per cent. use the phenolsulphonephthalein test when they operate on patients. Others use various tests. No more striking evidence of the keen desire for increased accuracy in diagnosis and prognosis in surgical work is to be found than in the persistent and laborious attempts made in order to arrive at a trustworthy method of estimating the functional value of the kidney. Failure of renal function is responsible for a certain proportion of the death-rate.

DISCUSSION

DR. M. W. WARE, New York: The statistics of Young and Freyer when there were no functional tests of the urinary tract were just as good then as now. I recall years ago when Young reported 100 prostatectomies with no deaths, and he did not make use of functional tests.

DR. GIBBONS, New York: I have operated in a great many cases of cancer of the breast without making use of functional tests of the kidney, and none of the patients died on the table or as the result of the operation; but I packed all around the chest with hot towels. It is a matter of having sense not to operate on dying patients. A friend of mine used to say that if the pathologist said cancer, the patient would live; if he said the disease was not malignant the patient would die.

Dr. Paul Pilcher, Brooklyn: I believe in the value of the phenolsulphonephthalein test. During the past year or so we have lost patients by operating when it seemed to us that if we had been warned beforehand that there was something wrong with the kidneys, we might not have operated, or if we had waited and prepared the patients properly, and operated some time later, life might have been saved. Many a patient will be saved by our knowing which of the kidneys is doing the better work.

Dr. Edwin Beer, New York: I agree with Dr. Vander Veer and Dr. Pilcher that functional tests, properly interpreted, will save a great many lives. I am convinced that practically all these tests have their indications and are of value, and by carrying them out we shall prevent a great many deaths which would otherwise follow operations.

Transfusion of Blood, Direct and Indirect

Dr. John A. Hartwell, *New York:* In hemorrhage transfusion is of value, provided it is done properly. Transfusion in cases of ectopic gestation in which rupture has occurred, in gastroduodenal ulcers and in typhoid is indicated and is valuable. I encourage transfusion in the more advanced cases of splenic anemia, pernicious anemia and the severe grades of anemia of unknown origin. Transfusion as a therapeutic agent in pernicious anemia has been of only temporary value. Transfusion is a valuable aid in the treatment of septic conditions, although the results reported by some have been disappointing.

DISCUSSION

Dr. George W. Crile, Cleveland: Dr. Hartwell did not refer to transfusion of blood in acute surgical shock, or in those patients on whom, through emergency, it is necessary to perform a major operation. There is no question whatever but that in acute surgical shock direct transfusion of blood has given the greatest amount of relief and will revive a patient better than any other method. I have used it many times in acute traumatic cases.

Dr. David J. Kaliski, New York: It has been our practice to make preliminary blood-tests in all cases before transfusion, and by this means we have been able to rule out all accidents during transfusion which might occur from hemolysis, from agglutination or from both. A Wassermann test is made in every case to rule out syphilis.

Dr. Robert H. M. Dawbarn, New York: I have recently obtained remarkable results in this class of cases by the addition of large doses of ergot to the saline solution. There is not a single case on record of death from an overdose of ergot, and it has been given in large doses in cases of congestive headaches. The dose is half an ounce of ergotol with from about 1,800 to 2,000 c.c. of normal saline.

(To be continued)

LOUISIANA STATE MEDICAL SOCIETY

Thirty-Fifth Annual Meeting, held at New Orleans, April 20-23, 1914

The President, Dr. Fred J. Mayer, Opelousas, in the Chair

Diseases of Aorta, with Special Reference to Aneurysm

Dr. George S. Bel, New Orleans: Almost all aneurysms of the aorta are the result of syphilis. The lesion is primarily in the outer muscular wall and consists of a gummatoid infarction. We do not know what percentage of patients who have syphilis develop syphilitic aortitis, but undoubtedly it is quite common and frequently unrecognized, as shown by necropsy. The essential signs and symptoms of syphilitic aortitis are precordial pain, paroxysmal dyspnea, tachycardia, increased pulsations of vessels of neck, dilatation of aorta and positive Wassermann. It is important to treat all cases early and properly in order to avoid the formation of aneurysm. Weeks and often months precede the actual aneurysmal formation after the syphilitic aortitis began, which, in most of the cases, affords an opportunity for the clinician to recognize the specificity of the aortic disease, and thereby anticipate the formation of aneurysm by instituting syphilitic treatment.

DISCUSSION

Dr. J. B. Guthrie, New Orleans: Without careful percussion of the base of the heart in the first interspace, the practitioner is going to fail to diagnose aneurysm. I cannot agree that percussion is the most valuable of all means of physical examination. The importance of percussing the base of the heart in the region of the manubrium sternum cannot be emphasized too much from a diagnostic point of view. We must institute treatment, if possible, in the prophylactic stage. When a certain amount of aortitis exists, with manifest arteriosclerosis in the peripheral arteries, we are not doing our duty to these patients unless we investigate them fully from the point of view of syphilitic disease.

Dr. Adolph Henriques, New Orleans: Undoubtedly we get more information with the Roentgen ray than by any other single means, but in order to secure this information we have to make a proper examination with the fluoroscope and from several directions, front, back, side and the oblique position. If this is done with a knowledge of what constitutes the normal appearance of the aorta, we can recognize 90 per cent. of aneurysms.

Cerebrospinal Meningitis

Dr. Randolph Lyons, New Orleans: In my twenty-two cases there were eleven deaths. One of the fatal cases did not receive any serum, and hence it is omitted. The mortality for the twenty-one cases treated with serum was 47.6 per cent. If three patients who were practically moribund and died in less than forty hours are excluded, the death-rate may be reduced to 38.8 per cent. Of the remaining seven fatal cases, two had complicating pneumonias, and a third acute nephritis. Five of the patients died of uncomplicated meningitis. Unfortunately no post-mortems were obtainable. In the eleven fatal cases, nine patients died in the first week of admission. Even barring the moribund cases, a mortality-rate of 38 per cent. may be considered rather high under serum therapy. The disease, however, was in many of the cases unusually severe. Another factor which may play a part in the mortality-rate is race. Statistics gathered from the recent epidemics in the South and Southwest have uniformly shown a higher death-rate in the negroes than in the whites, though both races had the benefit of the serum. Galveston was the only exception to this rule. This apparent lessened resistance to the disease among negroes may be due less to radical qualities than to insanitary living and ignorance. The negro usually waits until the disease is well advanced before coming to a hospital. Of the eleven patients who recovered, only two showed any after-effects of the disease. One patient was totally deaf and the other partially deaf.

DISCUSSION

Dr. M. L. Graves, Galveston: The mortality mentioned by Dr. Lyons is entirely too high and must be explained on the ground that the patients received the serum treatment either after the disease had progressed too far or other conditions were present that I am unable to account for. The reduction of mortality by the prompt, efficient and repeated serum therapy is very great.

Dr. M. J. Carouse, Point Coupee: I would like to ask the author what he considers a large dose of the meningococcic serum injected into a child or an adult.

Dr. Randolph Lyons, *New Orleans:* In my series of cases we had to deal with adults. I consider large doses of the serum anything over 40 c.c., but it depends on the amount of spinal fluid withdrawn.

Pellagra and Its Treatment

Dr. E. H. Martin, *Hot Springs, Ark.:* In the large majority of cases the salvarsan treatment of pellagra leads to an uninterrupted recovery without unpleasant symptoms. In some cases the intense pains in the lower extremities, and occasionally in the arms, may be very persistent, and such neuritis may continue for a time after the treatment has been completed. This is strictly a pellagrous symptom, as it does not occur in cases of cerebrospinal lues similarly treated. A few cases will be met in which the infection is so intense, although the symptoms may not be correspondingly severe, that little impression seems to be made and the patient finally dies of the disease. If specific treatment is used in all cases you may confidently expect to cure permanently over 80 per cent.

Fisher's Alkaline-Saline Therapy

Dr. J. T. Halsey, New Orleans: Many cases of general edema and of nephritis are not benefited by this alkaline-saline therapy, and a certain proportion of such cases will be unfavorably influenced by it. In spite of my own lack of success in applying this treatment in one case, I shall continue to try it out cautiously but fairly. It should be tried in cases of general edema or nephritis which do not respond to our usual methods of treatment.

Institutional Treatment of Nervous and Mental Diseases

Dr. Charles V. Unsworth, New Orleans: Of paramount importance in institutional treatment is the educational, industrial and moral training. Industrial training should be directed toward encouraging contentment and industry by occupations suitably selected according to individual tastes. Patients should be assisted to lead well-regulated lives, in order that they may be led to forget the irksomeness of confinement, and helped to believe that they are taking some part in the work of the world. In the Louisiana Retreat the results secured from industrial training have been most gratifying.

Summary of Present Status of Osteogenesis

Dr. Isadore Cohn, New Orleans: I have operated on more than sixty animals. Periosteal transplants or flaps have not reproduced bone in a single instance. I do not believe that periosteum is essential to the life and growth of the transplant, nor do I believe that it is essential to the repair of the defects in bone. Periosteum is not an osteogenetic agent. It serves to protect, to guide the growth of and nourish bone. Bone transplants live and grow; they have an inherent osteogenetic function. In the light of our present evidence, there should be a revision in our teaching in regard to the repair of fractures. Callus is not a product of the periosteum, but of the cortex and endosteum. The autogenous bone graft or transplant is destined to a greater field of usefulness.

(To be continued)

NEW YORK NEUROLOGICAL SOCIETY

Meeting held April 7, 1914

The President, Dr. Smith Ely Jelliffe, in the Chair

Chronic Progressive Cerebellar Tremor

Dr. J. Ramsay-Hunt: Three cases of this affection have come under my observation, two were advanced cases; the third was of more recent date. In the former the disease had been progressive over a period of six years. It was characterized by a chronic, gradually progressive tremor, coarse and irregular in character, associated with symptoms of asynergia, hypotonia, adiadokokinesis, and the *intermittent asthenia*, an inability to sustain fixed or continuous muscle contractions. All of these symptoms were referred to disturbance of the cerebellar function. The question of multiple sclerosis was an important one in the interpretation of this group of cases. As, however, all the symptoms indicated a disturbance of the cerebellar function, and were slowly progressive, I would regard these cases as representing a well defined and progressive disease of some portion of the cerebellar mechanism. The clinical type I would designate as the *chronic progressive cerebellar tremor*. Such cases have probably been variously classified as hereditary or essential tremor, multiple sclerosis, hysterical tremor, traumatic neurosis and atypical paralysis agitans. The reports of three cases were given.

Insanity among Jews

Dr. A. A. Brill and Dr. M. J. Karpas: From the figures available in literature one could readily see that the sweeping statement made by so many that the Jew was disproportionately afflicted with insanity had never been confirmed by careful statistical data. We examined the statistical data of the admissions to the Manhattan State Hospital for four consecutive years, beginning Oct. 1, 1908, and ending Sept. 30, 1912. The total number of admissions was 5,710 (2,803 men and 2,907 women), of which there were 1,203 Jews, (588 men and 615 women). The Jews thus constituted 21 per cent. of the total admissions. The predominating psychoses among Jewish patients were of the functional type. The highest percentage was found in the manic-depressive group, and second in order was the undifferentiated depressions, the greatest majority of which belonged to the manic-depressive class, and third in order was the dementia praecox group. The relatively high percentage of the imbecility and constitutional inferiority groups might be explained by the fact that these diagnoses were made only too often when a foreign Jew was examined by a physician who was unfamiliar with his language and racial characteristics. The relatively high percentage of the infective exhaustive groups in men may be partially attributed to the poor hygienic conditions at home and in sweat-shops. The general paresis group showed a comparatively high percentage. The Russians, however, found a very low percentage of general paresis among Jews. The explanation lay in the fact that in Russia the orthodox Jews were in the majority, and owing to their rigid religious tenets and early marriages, they led a pure sexual life. The senile and epileptic insanities and psychoses accompanying organic brain diseases showed a relatively low figure, and the alcoholic psychoses represented only 2.5 per cent. of the male alcoholics: there were none among the female admissions.

DISCUSSION

Dr. George H. Kirby: It is important to know that the Italians are bringing in more epilepsy than any other race; that the Irish supply an enormously disproportionate number of alcoholic psychoses, and that the recently arrived Jews furnish a high percentage of dementia praecox, manic-depressive insanity and feeble-mindedness. To determine the incidence of insanity, one should not compare an essentially immigrant population (such as the Jews in New York with the native born population. An immigrant population may be variously constituted. It usually contains a disproportionate number of young adults, and the two sexes might exist in unusual proportions. On the other hand, the native born population contains from one-sixth to one-fifth of children, and has a much larger proportion of middle aged and old people than an immigrant population. One reason why dementia praecox and manic-depressive insanity are relatively more frequent among Jews admitted to the hospitals than the native born is because there were relatively more young adults in the Jew population. As the average age of the immigrant population increases, there will be more cases of paresis, and, later still, more cases of arteriosclerosis and senile dementia among the Jews.

In regard to feeble-mindedness the data available indicates that it is proportionately higher among Hebrews than other races. Among all the cases of imbecility admitted to the Manhattan State Hospital during the past four years, 50 per cent. of them were Jews, whereas this race constituted only 21 per cent. of the total admissions.

Dr. Maurice Fishberg: Great care must be taken in interpreting the statistics of insanity. Ninety-five per cent. of Jews are city dwellers as against only thirty-three per cent. of non-Jews. Urban dwellers have a higher incidence of insanity, and must commit their mental defectives to institutions, whereas in rural populations the rates of insanity are lower and the milder forms of mental alienation are permitted to roam about. The Jews are engaged in financial and commercial pursuits in much larger numbers than the Christians, and this has an influence in the direction of increasing the number of insane among them.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Albany (N. Y.) Medical Annals

April, XXXV, No. 4, pp. 179-242

1 Mental Defectives. R. W. Hill, Albany.
2 Causes of Backwardness in Children. C. H. Johnson, Yonkers.
3 Determination of Mental Defect. C. Bernstein, Rome.

American Journal of Insanity, Baltimore

April, LXX, No. 4, pp. 765-1001

4 Chronicity and Deterioration in Manic Depressive Cases. S. Brown, White Plains, N. Y.
5 Analysis of Twenty-Five Cases of Mental Disease Arising in Fifth Decade. E. E. Southard, Boston, and E. D. Bond, Philadelphia.
6 *Distribution of Lesions of General Paralysis. S. T. Orton, Worcester, Mass.
7 *Amyloid Degeneration of Brain in Two Cases of General Paresis. S. C. Fuller, Westboro, Mass.
8 Psychoses Following Apoplexies. J. H. W. Rhein, Philadelphia.
9 Study of Hallucinosis. A. Gordon, Philadelphia.
10 Association Test as an Aid in Diagnosis. W. R. Dunton, Jr., Towson.
11 Father Complex: Report of Five Cases. H. J. C. Kuhlmann, Buffalo.
12 Benjamin Rush, Patriot, Physician and Psychiater. F. Woodbury, Philadelphia.
13 Case of Chorea Insaniens. C. A. Porteous, Montreal.
14 Surgical Procedures on Insane. A. S. Chittenden, Binghamton, N. Y.

6. **Distribution of Lesions of General Paralysis.**—A graduated review by Orton of the intensity of the lesions of general paralysis in six areas of each hemisphere of 50 unselected cases indicated the following order of severity—frontal, hippocampal, temporal, precentral, postcentral and with markedly less involvement of the occipital. The circle of Willis does not act as a path of ready communication between the carotid and vertebral systems. The hippocampal region receives a part of its blood-supply from the carotid group, thus including within the distribution of the branches of the carotid those areas where the lesions have been found to be prominent and suggesting this vascular system as the basis for the distribution in the typical case.

7. **Amyloid Degeneration of Brain.**—Two cases of general paralysis of the insane, one with a rather typical clinical course, the other presenting symptoms apparently of focal origin which obscured the clinical diagnosis, showed at autopsy, in addition to the usual gross anatomical changes of paresis, the typical histopathologic lesions of the disease. In one case there were added certain proliferations of the cells of vessel walls, indistinguishable from histopathologic lesions of the endarteritic non-paretic type of cerebral lues. Other alterations present in both cases were certain glistening, grayish or "fish-flesh" appearing, homogeneous deposits, visible to the unaided eye and limited chiefly to the cerebral cortex. In one case they were small, for the most part discrete, thickly sown in the frontal and parietal areas and found in other portions of the cortex. In the other case this type of alteration was restricted to a portion of the right calcarine area. Here, however, the macroscopic appearance was that of a confluent mass.

Microscopically, the process was shown to have involved the mesoblastic apparatus by the deposition of stuffs in the walls of blood-vessels which eventually converted them into structureless masses. Many of the apparently extravascular deposits proved to be only residuals of vessels, the lumina of which had became obliterated, or groups of vessels which had coalesced as the space between them had became annihilated by the encroachments of their respectively thickened walls, while the remainder not so classed could be reasonably interpreted as deposits within the meshes of the adventitial net-like proliferations exhibited by many vessels. Moreover, the process brought to light a richer vascularization than is usually shown in the most pronounced type of the atrophic paretic cortex. The study of this rich vascularization in a general way confirmed the contentions of Cerletti, namely, that what heretofore has been looked on as actual vessel proliferation in the brain, in the majority of instances, is more apparent than real.

The microchemic differences which these deposits exhibited led Fuller to conclude that, despite the wide distribution in the first case and the extent to which surrounding structures had been compromised, the process was still in a stage of devolution, with an amyloid degeneration as the goal. The tannin-silver method in demonstrating the connective tissue invasion of nervous structures by a net-like extension of the proliferated adventitia of blood-vessels added not only confirmation of the previous observations of Snessarew and Achucarro, but furnished the final link in the chain of evidence that in these two cases the process played itself out in the mesoblastic apparatus.

American Journal of Public Health, Boston

March, IV, No. 3, pp. 179-288

15 Occupational Diseases and Legislative Remedies. J. B. Andrews, New York.
16 *Investigation into Relationship of House Fly to Disease—Special* Importance of Fly in Infant Welfare. D. B. Armstrong, New *York.*
17 Midwives in America. C. C. Van Blarcom, New York.
18 Meaning of "Faith Cures" and Other Extra-Professional "Cures" in Search for Mental Health. W. A. White, Washington, D. C.
19 Prevention of Carriers. W. A. Sawyer, Berkeley, Cal.
20 *Study of Germicidal Action of Ultraviolet Rays. E. M. Houghton and L. Davis, Detroit.
21 Serious Fallacy of "Standard" Methylene-Blue Putrescibility Test. A. Lederer, Chicago.
22 Report of Committee on Industrial Hygiene and Sanitation in Home. J. H. Landis.
23 Report of Committee on Study and Prevention of Communicable Diseases. F. C. Curtis.

20. **Germicidal Action of Ultraviolet Rays.**—Houghton and Davis found that the ultraviolet rays produced by the Cooper-Hewitt mercury arc have a strong bactericidal action. Certain species of bacteria in aqueous suspension, including spore-forming organisms, are killed by exposure to rays. Molds, however, are only partially destroyed by the ultraviolet light. The action seems to be a photo-mechanic process, and is, in all probability, due to absorption of the ultraviolet rays by the bacterial protoplasm. Water, wines, many inorganic and a number of organic substances in aqueous solution, can be sterilized by intraviolet light. Bacterial vaccines require a prolonged action. Proteins and other bodies of high molecular weight interfere with the action of the rays. Turbidity, both organic and inorganic, has a similar action. Color, within certain limits, seems to have no influence.

American Journal of Roentgenology, Detroit, Mich.

March, I, No. 5, pp. 201-232

24 *Some Unusual Bone Lesions. A. Hartung, Chicago.
25 *Preliminary Report on Control of Percussion by Means of Roentgen Rays. G. C. Shattuck, Boston.
26 Roentgen-cinematography of Stomach and Duodenal Cap. L. G. Cole, New York.

24-25. Abstracted in The Journal, November 8, pp. 1742 and 1744.

Annals of Surgery, Philadelphia.

May, LIX, No. 5, pp. 645-804

27 Technic of Comparative Hyperemia. C. G. Cumston, Geneva, Switzerland.
28 **Vaccine and Serum Therapy in Septicemia.* A. C. Burnham, New York.
29 Advantages of Double Resection in Certain Types of Goiter. D. C. Balfour, Rochester, Minn.
30 *Frequency of Carcinoma of Appendix. W. C. MacCarty and B. F. McGrath, Rochester, Minn.
31 Consideration of Certain Coexisting Lesions of Gall-Bladder and Kidney. E. Eliot; Jr., New York.
32 Splenic Anemia with Splenectomy (Banti's Disease). F. C. Herrick, Cleveland.
33 *Ileocecal Tuberculosis. J. Wiener, New York.
34 *Experimental Study of Intestinal Obstruction. H. B. Stone, B. M. Bernheim and G. H. Whipple, Baltimore.
35 Sarcoma of Small Intestine. J. Speese, Philadelphia.
36 Surgical Treatment of Acute Gonorrheal Epididymitis by Epididymotomy. J. B. Clark, New York.

28. ***Serum Therapy in Septicemia.**—One hundred and eleven* consecutive cases of severe infection in which either the

course and symptoms were those of septicemia, or cultures showed the presence of bacteria in the circulating blood, were studied by Burnham. The mortality of the entire series (111 cases) was 74, or 66.6 per cent. In some of the cases vaccines were used in the treatment. Burnham believes that vaccines are of benefit in many of the cases not overwhelmed at the onset by the severity of the infection, and, clinically, seem to benefit the majority of the cases. Antistreptococcic serum is of great value, especially during the early stage when its bactericidal powers are most pronounced, and if given in sufficient dosage during the period of invasion will often change a systemic bacteriemia into a localized infection. The combination of antistreptococcic serum, used in the early stage of septicemia, together with autogenous vaccines, used as soon as they can be prepared from blood-cultures, seems to be particularly beneficial. If the blood-cultures are sterile, vaccines may be prepared from the local lesion, although this method is unsatisfactory and may lead to errors. Stock vaccines are still less desirable and are of uncertain value.

Burnham warns that neither sera nor vaccines, although they usually do little harm, are free from danger, and the dosage and intervals need to be carefully worked out. Open-air treatment in cases in which cultures are sterile and as an adjunct to vaccine and serum therapy seems to be the best method of increasing the resistance of the patient.

30. **Carcinoma of Appendix.**—One in every 225 of all appendices, and one in every 53 partially or completely obliterated appendices MacCarty and McGrath found were carcinomatous. Thirty-one per cent. were found in association with other abdominal and pelvic conditions.

33. **Ileocecal Tuberculosis.**—Ileocecal tuberculosis Wiener states is usually a primary lesion. The infection takes place either from tubercle bacilli that have been swallowed (milk or sputum) or through the mesenteric glands. Pathologically we distinguish two forms, the ulcerative or enteroperitoneal and the hypertrophic ileocecal tumor. The diagnosis is very difficult owing to the similarity to appendicitis, with which diagnosis most cases come to operation. The two operations to be considered are lateral anastomosis with or without exclusion and resection. In the majority of cases Wiener suggests the lateral anastomosis first, and there will then often be no secondary operation required; or, if required, it will be done under much more favorable conditions. Wiener reports seven cases.

34. **Experimental Study of Intestinal Obstruction.**—In dogs the authors were able to isolate by double ligatures a loop of the duodenum and high jejunum and reestablish the continuity of the alimentary tract about the closed loop; such a condition is rapidly fatal. A fluid collects within the closed loops that is highly toxic, producing, when injected into normal dogs, a reaction much like that of dogs with closed loops. This toxin is believed to be the cause of death. The toxin is formed by the mucosa of the closed loop, some of it being secreted into the lumen and some remaining within the cells of the mucosa. If the closed loops be drained externally, the postoperative course of the animal is altered, but varying degrees of intoxication still are observable, and the presence of toxin within the mucosa of the drained loops is demonstrable. Absorption takes place not only from the loop contents but from the mucosa direct, the latter being a quite important source of intoxication.

There are various possible explanations for the perversion of function that causes the mucosa to become a source of intoxication, but none is yet proved. The fundamental explanation of the change is as yet unknown. It is possible by the repeated injection of sublethal amounts of the toxin to immunize dogs against fatal doses. The parenchymatous organs, spleen, intestinal mucosa, etc., and particularly the liver, seem to be especially concerned in the production of the resistance against the toxin when dogs are immunized. The extract of an immunized dog's liver, properly handled, will destroy the toxin in vitro. The authors believe that the intoxication observed in closed loops is quite similar to that existing in simple obstruction, and that the same toxin is the essential agent causing death in each instance. The establishment of an enterostomy for drainage in clinical cases may not meet all the requirements for successful treatment.

Boston Medical and Surgical Journal

May 7, CLXX, No. 19, pp. 709-744

37 Results of Swift-Ellis Intradural Method of Treatment in General Paresis. A. Myerson, Taunton.
38 Hip Fractures and Their Treatment. F. J. Cotton, Boston.
39 Experimental Method as Utilized in Clinicopathologic Department. H. T. Karsner, Boston.

Bulletin of Johns Hopkins Hospital, Baltimore

May, XXV, No. 279, pp. 133-164

40 *Colloidal Gold Reaction in Cerebrospinal Fluid. S. R. Miller and R. L Levy, Baltimore.
41 *Essential Features of Acidosis and Their Occurrence in Chronic Renal Disease. A. W. Sellards, Baltimore.
42 Work of Out-Patient Department of Henry Phipps Psychiatric Clinic C. M. Campbell, Baltimore.
43 Dystrophia Epithelialis Cornea. Report of Case. L. B. Whitham, Baltimore.

40. **Colloidal Gold Reaction in Cerebrospinal Fluid.**—The present report by Miller and Levy is based on the examination of 210 spinal fluids secured from 171 cases. In 2 of 8 examinations made on 4 cases of purulent meningitis, typical *Verschiebung nach oben* was observed. Two gave reactions analogous to the paretic type, with the noteworthy differences that the supernatant fluid in the low dilutions showed a pink turbidity and the precipitation continued throughout the remaining tubes. Eleven cases of tuberculous meningitis confirmed either by the finding of tubercule bacilli or by autopsy, gave, with one exception, maximum color changes in the higher dilutions. One observation confirms Eicke's statement that in the early stages the reaction may simulate that of syphilis. As the disease advances there is *Verschiebung nach oben.* Of 10 cases of congenital syphilis 3 showed moderate pleocytosis, 5 a positive phase I. Reactions of the luetic type were obtained in 80 per cent. Reactions in the "luetic zone" occurred in 4 out of 5 cases of secondary syphilis. In 11 cases of tertiary syphilis comprising instances of latent syphilis, gummatous lesions and vascular manifestations, a reaction in the luetic zone occurred in 4. In none was there any demonstrable clinical evidence of central nervous system involvement. Several of the individuals were elderly men, who had had their primary infection many years before, and who, in all probability, will never develop cerebrospinal syphilis, tabes or paresis.

All the tabes dorsalis cases showed luetic curves. With 3 exceptions, these were of moderate intensity, yet definite. Thirteen of the 15 fluids from cases of cerebrospinal syphilis examined reacted in the luetic zone, 6 with fairly marked intensity. All of the 49 cases of general paresis gave characteristic paretic curves. The more advanced cases clinically have shown the most striking tests. The authors conclude that the colloidal gold test is essentially a laboratory method. It can be performed rapidly and with a minimal amount of spinal fluid. Extreme care in the preparation of reagents and the cleaning of glassware is imperative. The test is of no aid in the diagnosis of purulent or tuberculous meningitis. It has no advantage over known laboratory procedures in the diagnosis of congenital syphilis. Reactions in secondary and tertiary syphilis are inconstant. Their significance when present is now known. The statement that they indicate the earliest stages of central nervous system involvement lacks proof. The positive reactions observed in the majority of cases of tabes and cerebrospinal syphilis are not characteristic. The authors feel that the reaction peculiar to paresis is sufficiently constant to warrant its use as an aid in the differentiation of this condition from others with which it might be confused.

41. **Acidoses and Their Occurrence in Chronic Renal Disease.**—The essential feature in acidosis, Sellards says, consists in a general impoverishment of the body in bases or in substances which readily give rise to bases, e. g., sodium carbonate. This may be brought about by the loss of bases as such, as in the so-called relative acidosis, or by the neu-

tralization by acids as in the so-called absolute acidosis. In either case the end result is the same and the distinction between relative and absolute acidoses is misleading. The fundamental features of every acidosis which have been established thus far are: 1. An increase in the tolerance of the body to fixed bases. 2. A diminution in the titratable alkalinity of the blood-serum. 3. A diminution in the carbon dioxid of the blood. The excretion of ammonia either in its relative or absolute amounts, Sellards says, does not afford a definite basis for the detection of acidosis. Thus: 1. The ammonia excretion may be normal in acidosis. This may occur in diabetic cases which are free from any suggestion of renal disease. In the nephritic cases in which the ammonia is low in the urine it is probable that there is no increase in the quantity of ammonia in the blood, though some have suggested that it accumulates in the blood and its excretion in the urine is suppressed. 2. The ammonia excretion may be increased even to the extent of 2 gm. per day with an ammonia coefficient of 40 per cent., in conditions in which there is no acidosis.

An acidosis of high grade occurs in certain nephropathies. The acidosis reaches its maximum in the uremia of acute and of chronic diffuse nephropathy. It is not a terminal event, for it is often present in relatively high grade in outspoken cases many months before the development of uremia. It represents the effect rather than the cause of the renal lesions and thus constitutes a condition of only secondary importance. The characteristics of the chemical pathology of this acidosis are: 1. Increase in tolerance to bases. 2. Decrease in titratable alkalinity of the blood. 3. Decrease in the carbon dioxid content of the blood. 4. Normal excretion of ammonia. 5. Absence of any disturbance of carbohydrate or fat metabolism, and absence of the salts of any abnormal organic acids.

The changes in the titratable alkalinity of the blood which can be detected by the use of phenolphthalein afford a ready means for the prompt diagnosis of acidosis and the method is particularly applicable in renal disease. In this condition it furnished a definite indication of the amount of bicarbonate that will be required for the relief of the acidosis. The determination of the tolerance of the body to sodium bicarbonate also affords a delicate method of general application for the detection of acidosis. Examination of the feces showed that bicarbonate was not excreted into the intestine, even in the cases in which massive doses were injected. Some of the toxic symptoms of uremia Sellards claims are due not to the presence of a toxin, but to the absence of a normal constituent of the blood, namely, the carbonates. Therefore the therapeutic bleeding for the removal of any toxins that may be circulating causes at the same time a still further diminution in a substance in which the blood is already seriously depleted. This disadvantage could be readily obviated by the injection of bicarbonate at the time of bleeding. Sellards suggests that this acidosis is perhaps the result of defective function of the kidney in the normal separation and excretion of acid salts. If this supposition is correct, the acidosis would be an indirect expression of renal retention. In support of this it has been found that the acidosis is in general parallel to the ordinary signs of renal retention, such as the suppression of the excretion of dyes and sugars and the accumulation of non-protein nitrogen in the blood.

Indiana State Medical Association Journal, Fort Wayne

April 15, VII, No. 4, pp. 141-194

44 Occupational Traumatisms of Eye. E. M. Shanklin, Hammond.
45 Typhoid Perforation, Early Operation, Death from Suppurative Peritonitis Fifty-Five Hours after Operation. B. P. Weaver, Ft. Wayne.
46 Indications for Surgery of Ethmoid and Sphenoid Labyrinth. Case Report. J. McCall, Jr., Terre Haute.
47 Ocular Neurasthenia. J. R. Newcomb, Indianapolis.

Journal of Cutaneous Diseases, New York

April, XXXII, No. 4, pp. 257-346

48 Case for Diagnosis: Impetigo or Impetigo Herpetiformis? H. P. Towle, Boston.
49 Consideration of Two Outbreaks of So-Called Pemphigus Neonatorum. A. P. Biddle, Detroit.
50 Oriental Sore in Americas, Report of a Case. E. L. McEwen, Chicago.
51 Pathology of Xanthoma Tuberosum Multiplex. F. C. Knowles, Philadelphia.
52 Acrodermatitis Chronica Atrophicans: Transition from Infiltration to Atrophy. F. Wise, New York.

May, No. 5, pp. 347-412

53 Pityriasis Rosea. W. D. Owens, U. S. Navy. Idem. H. E. Alderson, San Francisco.
54 *Tuberculin Therapy in Tuberculosis Cutis, Tuberculides and Allied Conditions. G. M. MacKee, New York.

54. **Tuberculin Therapy in Tuberculosis.**—Fifty-two cases were treated by MacKee with bacillus emulsion in various dilutions. These cases included lupus vulgaris, tuberculosis, verrucosa cutis, tuberculosis of buccal mucosa, scrofuloderma, tuberculous adenitis, Bazin's disease, tuberculous dactylitis, papulonecrotic tuberculid and lupus erythematosus. In this series true tuberculosis of the skin apparently completely recovered under the influence of tuberculin injections. All the cases of ulcerative tuberculosis of the skin and mucous membrane failed to yield to tuberculin. At first this was thought to be due to the activity of complicating organisms, and perhaps it is, but these lesions failed to respond to a combination of tuberculin and mixed, polyvalent stock vaccines. The ulcerative lesions of Bazin's disease yielded at once. Lupus erythematosus and papulonecrotic tuberculid, which are thought to be due to the products of tubercle bacilli rather than to the organisms themselves, failed to respond. In this series of cases nothing but tuberculin was employed. There was no local or general treatment.

Journal of Outdoor Life, New York

April, XI, No. 4, pp. 97-127

55 Tuberculosis Among Homeless Men and in Lodging Houses. C. B. Barnes, New York.
56 Tuberculosis "Repeaters." S. Potter, New York.
57 Difficulties Encountered by Hospital Authorities in Detaining Homeless Tuberculous. R. J. Wilson, New York.
58 Detention of Tuberculous in City Hospital. W. H. Conley, New York.
59 Effect of Habits of Posture on Health. J. E. Goldthwait, Boston, Mass.
60 How and When Do We Contract Tuberculosis? L. Brown, Saranac Lake.
61 Home Treatment of Pulmonary Tuberculosis. G. M. Sternberg, Washington, D. C.
62 Tuberculosis and Its Treatment. W. C. Klotz, Los Angeles.
63 Adventures of Tuberculosis Branch Germ as Told by Himself. A. Somerfield, Naperville, Ill.

May, No. 5, pp. 129-159

64 Practical Application of Sanatorium Treatment for Tuberculosis. H. S. Newhart, North Wilmington, Mass.
65 Subjective Symptoms of Pulmonary Tuberculosis and Their Significance to Patient. G. L. Bellis, Wales, Wis.
66 Nature Study for Tuberculous Children. S. L. Patteson, South Euclid, Ohio.
67 What Fresh Air, Good Food and Plenty of Sleep Did for One Baby. I. Webber, Bobcaygeon, Ontario.

Lancet-Clinic, Cincinnati

April 18, CXI, No. 16, pp. 461-488

68 Kidney Function Estimation in Preparation of Patients for Prostatectomy. A. P. Cole, Cincinnati.
69 Present Status of Medicine and Dermatology in Japan. A. Ravogli, Cincinnati.
70 Prostitution System in Palestine. D. C. McMurtrie, New York.

April 25, No. 17, pp. 489-516

71 Brain Tumors from Clinico-Neurologico-Ocular Standpoint. L. D. Brose, Evansville, Ind.
72 Needed—New Human Race. J. H. Kellogg, Battle Creek, Mich.
73 Public Welfare Department—Its Proper Relations to Hospitals Under New Charter. O. P. Geier, Cincinnati.
74 U-Shaped Electromagnet for Surgical Purposes and Its Calculations. G. T. Fette, Cincinnati.

May 2, No. 18, pp. 517-542

75 Case of Unilateral Renal Aplasia. C. E. Kieley, Cincinnati.
76 Needed—New Human Race. J. H. Kellogg, Battle Creek, Mich.
77 Public Welfare Department—Its Proper Relations to Hospitals Under New Charter. O. P. Geier, Cincinnati.
78 Eye-Strain as Cause of Headache. J. Ranly, Cincinnati.

Medical Record, New York

May 9, LXXXV, No. 19, pp. 829-874

79 *Practical Management of Chronic Osteo-Arthritis. Report of Cases. P. W. Roberts, New York.
80 Loose Kidney Question. R. T. Morris, New York.
81 Surgical Treatment for Reduction of Vacuum Caused by Nasal Obstructions. C. A. Bucklin, Glasgow, Scotland.

82 *Ether-Oil Rectal Anesthesia: Some Theoretical Considerations. H. C. Luke, New York.
83 Practical Scientific Diagnosis and Treatment of Sterility in Male and Female. M. Huhner, New York.
84 Four Cases of Multiple Myeloma. M. H. Kahn, New York.
85 Case of Vincent's Angina, Treated with Neosalvarsan. H. H. Amsden, Concord, N. H.
86 Biologic Treatment for Cancer. C. F. D'A. Francis, Brooklyn.

79. **Practical Management of Chronic Osteoarthritis.**—Roberts states in considering the treatment of osteoarthritis, the problem presented is to remove discernible foci of infection, improve local nutrition, correct such deformities as tend to put undue strain on weight-bearing joints, and to place the painful parts at rest, so far as that is possible. So-called anti-rheumatic remedies, such as the alkalies, salicylates and iodids, have no effect on these conditions and should be avoided because of the digestive disturbances which frequently follow their exhibition. The diet usually prescribed for "rheumatism" is harmful, because it denies certain elements of nutrition which the economy demands. Such treatment as is afforded at the various watering places is at best of merely temporary benefit and has at times been observed to be a source of real injury. Massage and manipulation of joints with the idea of keeping them pliable is an inexcusable error, for it serves only to perpetuate the irritation of the already sensitive tissues. It would seem, too, that the importance of correcting visceroptosis in these cases has been very much overestimated.

Where a focus of infection exists, it should be removed. Vaccine treatment offers much that is hopeful for the future, but it is still in the developmental stage. The essentials of treatment followed by Roberts in his cases have been the administration of glandular preparations, rest, a diet reducing the intake of calcium, and the use of the d'Arsonval or bipolar high frequency current.

82. **Ether-Oil Anesthesia.**—The advantages of the oil-ether outside of its simplicity in Luke's opinion seem to be more apparent than real. In fact, with the possible exception of selected cases of bronchoscopy, he finds it difficult to see any indication for its use that cannot be as well and probably more safely met by the modern pulmonary methods.

Some of the undesirable clinical features which, Luke says, must certainly be looked for in a method involving so many theoretical objections are the following: (1) the rather exhaustive and unpleasant experience accompanying any special rectal preparation, as required here; (2) the occasional necessity and inconvenience of preliminary and subsequent proctoscopic examinations, as a matter of safety and caution; (3) occurrence during the induction period of cramps, with distressing sensations of fulness and pressure in the lower bowel, accompanied by desire for stool; varying degrees of anal irritation occurring early or late; (4) prolonged induction stage with frequent necessary recourse to the inhalation method; (5) any time after the first fifteen or twenty minutes' respiratory depression may rather suddenly or slowly appear, followed by arrested breathing, loss of muscular tone and dilated pupils, with the possibility of fatal syncope supervening; (6) the occurrence of mild to very severe grades of proctitis and colitis, these complications appearing in more aggravated forms where any pre-existent pathological condition is present; (7) delayed recovery, which may be prolonged for many hours; (8) increased toxemia.

Missouri State Medical Association Journal, St. Louis

April, X, No. 10, pp. 355-398

87 *Practical Methods of Differentiating between Active Tuberculous Lesions and Healed or Quiescent Ones. F. M. Pottenger, Monrovia, Cal.
88 Relation of Physician to Coroner's Office. L. R. Padberg, St. Louis.
89 Introduction to Laboratory Symposium. C. H. Neilson, St. Louis.
90 Stomach and Feces. H. W. Soper, St. Louis.
91 Serology. C. L. Klenk, St. Louis.
92 Luke, Greek Physician. G. Homan, St. Louis.
93 Free Service of Department of Preventive Medicine of University of Missouri. O. W. H. Mitchell, Columbia.

87. **Tuberculous Lesions.**—It is not right, says Pottenger, to speak of the tuberculin treatment of tuberculosis. Tuberculin alone is no treatment for tuberculosis. He considers the scientific treatment of tuberculosis a combination of tuberculin with all measures which will build up the patient and make his resisting power greater. The injecting of tuberculin alone, without proper care and supervision of the patient is unscientific and nothing short of malpractice.

Tuberculin is a specific remedy. Its action in tuberculosis is specific in that it stimulates the body cells to the production of certain definite antibodies whose function it is to attack and destroy tubercle bacilli and their toxins with which they come in contact. This is the only form of treatment that is specific. Fresh air, good food, proper regulation of life and the alleviation of distressing symptoms and complications are not specific, yet they are a very important part in the treatment of tuberculosis. They make the patient stronger; build up his resisting power; increase his reactivity and make his body cells capable of reacting to the tuberculin when it is injected or when it is produced normally.

Tuberculin also acts in stimulating healing. It increases fibrosis and aids in the production of scar tissue and encapsulation. While of inestimable value when properly given, it is of little or no value and may even do harm when given improperly. Too much must not be expected from tuberculin as a remedy. If it stimulates the body cells to the production of antibodies and increases fibrosis it is performing its function. It may fail to cure the disease and yet perform its function perfectly. Many men who use tuberculin fail to grasp what it should do. The result is that they are often disappointed. It cannot prevent necrosis when begun; it cannot fill up cavities; neither can it restore lost function to the various organs; but, if given properly, it will increase the antibodies in the blood, and will stimulate an increase of scar-tissue formation and thus improve the patient's chances of cure; but it should always be reinforced with other measures which will help the patient.

New Orleans Medical and Surgical Journal

May, LXI, No. 11, pp. 785-882

94 Comparative Medicine. W. H. Dalrymple, Baton Rouge.
95 Meat Inspection. W. H. Dalrymple, Baton Rouge.
96 Community's Right to Health Protection. A. H. Gladden, Monroe.
97 Phylacogens in Tuberculosis to Control Temperature Due to Secondary Infection. R. H. Chilton, New Orleans.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

April, XVIII, No. 4, pp. 189-233

98 Two Operations for Aneurysm after Matas Method. H. A. Royster, Raleigh, N. C.
99 Intestinal Perforation in Case of Ambulatory Typhoid—Operation with Recovery. B. C. Willis, Richmond.
100 Case of Popliteal Aneurysm and Its Rapid Disappearance Under Antisyphilitic Treatment. S. B. Cary, Richmond.
101 *Case of Lymphosarcomatosis under Roentgen Ray Treatment. D. D. Talley, Jr., Richmond.

101. **Case of Lymphosarcomatosis**—Talley's patient has improved steadily under Roentgen-ray treatment for five months, in spite of two other intercurrent affections. The blood-picture has improved in proportion to the clinical symptoms, with steady decrease of leukocytes in conjunction with increase in hemoglobin. Oct. 10, 1913, the leukocytes numbered 63,000, hemoglobin 45 per cent.; now the leukocytes number 19,300, hemoglobin 80 per cent.

Pennsylvania Medical Journal, Athens

April, XVII, No. 7, pp. 523-604

102 Real Significance of Visceroptosis. J. E. Goldthwait, Boston.
103 Surgical Treatment of Gastroptosis. H. D. Beyea, Philadelphia.
104 *Removal of Colon for Obstructive Fecal Stasis. Report of Eight Cases. J. G. Clark, Philadelphia.
105 *Roentgen-Ray Diagnosis of Gastroptosis. H. K. Pancoast, Philadelphia.
106 Care of Advanced Cases of Tuberculosis. C. J. Hatfield, Philadelphia.
107 Which Training Makes Best Specialist. H. W. Cattell, Philadelphia.
108 Value of Anatomy as Applied to Diagnosis of Medical Conditions. W. E. Robertson, Philadelphia, and J. Roxby, Swarthmore.

109 Transitory Vascular Hypertension Independent of Renal or Arterial Disease. R. G. Torrey, Philadelphia.
110 *Interstate Endorsement of Medical Licensure. J. M. Baldy, Philadelphia.

104. **Removal of Colon for Obstructive Fecal Stasis.**—Clark is skeptical as to the final outcome in cases in which the colon is not at least partially obstructed, for he cannot accept the theory that the colon is a useless organ. His experience convinces him that if the most conservative methods are adhered to, benefit may accrue from surgical intervention in these cases, but even with these successes there will be a considerable percentage of failures. A summary of his eight cases of colectomy shows the following results: 1. The radical relief of constipation in 5 of the 8 cases. 2. An absence of thirst in all but 1 case, and in this only of moderate degree. 3. An absence of immediate postoperative diarrhea in all cases, this symptom appearing several months later in one patient. 4. A somewhat remarkable gain in weight in 5 cases. 5. Striking improvement in general health in 3 cases with a considerable disappearance of neurasthenic symptoms; only partial or doubtful improvement in 2 and complete failure in 2; death of another from postoperative adhesions some months later. Although the immediate results were all favorable, yet the subsequent history Clark says may prove disappointing; therefore, it behooves every one who performs even a small number of these operations to keep the closest possible oversight of these patients after they leave the hospital. The most critical judgment should be brought to bear in analyzing results, for if it lead into wrong channels, this question has the greatest potentialities for surgical evil, and no one should report a single case without the fullest history and complete notes on the result some months subsequent to the operation. Based on practical deductions secured from the study of cases of general ptosis, Clark does not consider that they come within the operative domain unless obstructive symptoms are evident. For this reason, he does not deal with the ptosis *per se*, but with the particular portion of the intestine which is so hampered by actual sharp angulation that the fecal current is dammed back or retarded; hence the symptom of localized obstruction, rather than that of constipation, which cannot be relieved therapeutically, becomes the indication for surgical intervention. That his attitude is a conservative one is attested by the fact that in two years he has seen only eight cases to which he considered these radical measures applicable. These cases were represented clinically by extreme degrees of obstructive constipation, and dilated.

105. Abstracted in The Journal, Oct. 25, 1913, p. 1565.

110. Abstracted in The Journal, March 7, p. 805.

Public Health Journal, Toronto

April, V, No. 4, pp. 209-282

111 Care and Training of Feeble-Minded. E. R. Johnstone, Vineland, N. J.
112 Need of Institutional Care of Feeble-Minded. L. M. Brooking, Toronto.
113 Nova Scotia League for Care and Protection of Feeble-Minded. Stead, Halifax, N. S.
114 Mental Defectives in Alberta. R. B. Chadwick, Alberta.
115 Mentally Defective Pupils in Public Schools of Toronto. R. H. Cowley, Toronto.
116 Feeble-Minded Women in Houses of Refuge. J. McNeillie, Peterborough.
117 Need of Institutional Care of Feeble-Minded. A. Shortt, Ottawa.
118 Problem of Feeble-Minded. W. Cummings, Toronto.
119 Feeble-Mindedness—Municipal Problem. D. M. Cameron, London.
120 Feeble-Minded and Social Evils. G. S. Strathy, Toronto.
121 City Responsible for Care and Training of Feeble-Minded. J. O. McCarthy, Toronto.
122 Feeble-Minded and Crime. J. E. Farewell, Whitby.
123 Rural Cold Storages, Scientific Economic Necessity. P. H. Bryce, Ottawa.

Wisconsin Medical Journal, Milwaukee

April, XII, No. 11, pp. 345-378

124 Prostatectomy in Aged. J. F. Pember and T. W. Nuzum, Janesville.
125 Feeble-Minded and Their Relation to Society. A. L. Beier, Chippewa Falls.
126 Are Ideals Worth While? E. Evans, La Crosse.
127 Cancer and Cancer Problem. W. E. Ground, Superior.
128 Treatment of Peritonsillar Abscess (Quinsy). P. J. Calvy, Fond du Lac.
129 *Case of Trichiniasis with Unusual Blood-Picture. H. E. Cooper, Wauwatosa.

129. **Trichiniasis with Unusual Blood-Picture.**—A count of the leukocytes was made in Cooper's case on the day of entrance and showed 23,500 leukocytes. A smear of this blood was then stained with the Nocht-Jenner stain and a differential count of this stained specimen gave these surprising figures: Polymorphonuclear neutrophils, 18 per cent.; polymorphonuclear eosinophils, 72 per cent.; polymorphonuclear basophils, 0.5 per cent.; small lymphocytes, 1.5 per cent.; large lymphocytes, 1.5 per cent.; transitional leukocytes, 4.5 per cent.; large mononuclear leukocytes, 2 per cent. Other stains were made to verify this count, one of these stains showing an eosinophilia of 80 per cent. The attack was of slight intensity. The fever was intermittent in character, reached 102 to 103 F. in the afternoon, dropping down to normal in the early morning. There was no increase in pulse or respiration. The diarrhea which was present at the time of admission was checked within two or thrre days after entrance. The adult parasite, *Trichinella spiralis*, was never found in the stools. One week after entrance the fever began to decrease and on the tenth day was practically gone. The amount of eosinophilia remained about the same until several days after the temperature had become normal, when the count showed the eosinophilia to be decreased to 55 per cent. Just before leaving the hospital, apparently recovered, another count was made, which still showed an eosinophilia of 40 per cent., the picture being as follows: Polymorphonuclear eosinophils, 40 per cent.; polymorphonuclear neutrophils, 37 per cent.; polymorphonuclear basophils, 1 per cent.; small lymphocytes, 13 per cent.; large lymphocytes, 4 per cent.; transitional leukocytes, 5 per cent.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine and Parasitology, London

April, VIII, No. 1, pp. 1-130

1 Differentiation of More Important Mammalian Trypanosomes. W. Yorke and B. Blacklock.
2 Bronchial Spirochetosis in Uganda, with Pneumonic Symptoms. J. A. Taylor.
3 *Attempts to Find Disease Germs in Bed Bugs (Cimex Lectularius) after Feeding Experiments in Various Diseases: Leprosy, Lymphadenoma, Carcinoma, etc. D. Thomson.
4 Pathogenicity of Trypanosome (T. Nigeriense). J. W. S. Macfie.
5 Occurrence of Spirochetosis of Fowls in Southern Nigeria. J. W. S. Macfie and J. E. L. Johnston.
6 *So-Called Cure for Trypanosomiasis. W. Yorke and B. Blacklock.
7 *Antimony Trioxid in Treatment of Experimental Trypanosomiasis. W. Yorke and B. Blacklock.
8 Variations in Form of Microfilariae Found in Man. J. E. L. Johnston.
9 Occurrence of Plasmodium in Blood of West African Monkeys. H. Seidelin and A. Connal.
10 Scratching Birds and Tsetse-Fly. L. Lloyd.
11 *Origin and Development of Gametes (Crescents) in Malignant Tertian Malaria. D. Thomson.
12 Second Report on Cestoda and Acanthocephala Collected in Queensland. T. H. Johnston.
13 Microsporon Scorteum from Case of Ringworm in Man. H. Priestley.
14 *New Malaria Parasite in Man. J. W. W. Stephens.
15 Mutilation of Wounded on Battlefield. J. B. Christopherson.

3. **Attempts to Find Disease Germs in Bed Bugs.**—Four hundred and fifty-five bed bugs were used by Thomson in this research, of which 184 were controls. No acid-fast bacilli were found in 105 bed bugs fed on lepers, nor in thirty-five bed bugs caught on the bed mattresses of leper patients. In the few experiments conducted, nothing abnormal was found in bugs fed on cases of lymphadenoma, chronic lymphatic leukemia, sarcoma, carcinoma and malaria. Forty bed bugs fed on a case of splenomedullary leukemia all developed numerous Charcot-Leyden crystals in their intestines.

6. **So-Called Cure for Trypanosomiasis.**—Yorke and Blacklock tested the "sera" (Mehnarto contratoxin) supplied by a Mr. H. C. Sieg and found that it had not the slightest

therapeutic value in animals experimentally infected with pathogenic trypanosomes.

7. Antimony Trioxid in Treatment of Trypanosomiasis.—As regards the amount of antimony trioxid which can be given at a single dose without causing toxic effects, either local or general, it was found by Yorke and Blacklock that, as is generally the case, a relatively much larger quantity is borne by small than by large animals. At least 1 mg. per 10 gm. of body-weight can be administered intramuscularly, or intraperitoneally to rabbits, guinea-pigs, rats and mice without any untoward result. In donkeys and dogs, on the other hand, such a dose frequently caused death, and even much smaller doses were followed by abscesses at the site of inoculation. Although the amount of drug administered can be regulated, there is no control over the amount or rate of absorption. Post-mortem evidence proves that the proportion absorbed during a period of six months is exceedingly small. In view of the extremely long periods after which relapses have occurred, the authors are cautious in stating that an animal is cured. But as several have remained negative without relapse for over two hundred days, and subinoculated animals have not become infected, it appears that a certain number of cures have resulted.

11. Development of Gametes in Malignant Tertian Malaria.—Thomson claims that crescents are produced from ordinary asexual spores of *P. falciparum,* due to a development of immunity toward the latter. They develop somewhere in the internal organs, and then appear suddenly in the peripheral blood. The period required for their development is about ten days. Crescents do not generally live more than a few days in the peripheral blood. Crescents may be present in the peripheral blood during periods as long as eight weeks, not because individual crescents survive for that time, but because their numbers are constantly replenished from surviving asexual forms. Fresh broods of crescents come into the circulating blood daily or every other day, or irregularly, according as the asexual sporulations occurring ten days before, were quotidian, tertian or irregular.

Quinin has no direct destructive action on crescents, either during their development or afterward, but it destroys the asexual source of supply. Quinin in doses of 20 grains daily reduces the crescents to numbers less than one per cubic millimeter of blood within three weeks. The crescents obtained from autopsy smears of the inner organs take about ten days to develop into the adult state in the inner organs. They develop chiefly in the bone-marrow and in the spleen. The protoplasm of the crescent in all stages of development stains a faint greyish-blue often with a yellow tinge, in contrast to the deeper blue of the asexual schizonts. Adult crescents have been found in autopsy smears of the spleen and bone-marrow after eleven days' quinin treatment (45 grains daily). Malarial pigment has been found in spleen and marrow smears after forty-seven days' quinin treatment (30 grains daily).

No evidence was obtained of parthenogenesis in crescents. Crescents become spherical in about four minutes after the blood is drawn, which appears to coincide with the time of coagulation. They may flagellate in four minutes after the blood is drawn, but some may not flagellate till after fifty minutes. The crescents in patients subjected to thorough and continuous quinin treatment are able to flagellate. The spherulation of crescents is probably due to osmosis, which in turn probably stimulates the actual flagellation. The polar bodies seen in crescents which have become spherical are extruded chromatin. The microgametocytes are capable of extruding 4, 6, 8 or 10 flagella (microgametes). There is no reason to believe that crescents ever flagellate in the circulating blood of a patient.

14. New Malaria Parasite in Man.—The parasite studied by Stephens was found in the blood of an East Indian child. It is extremely ameboid. Thin processes often extend across the cell or occur as long tails to more or less ring-shaped bodies. These processes may be several in number, and may give the parasite most peculiar fantastic shapes like that of an irregular web or mesh. The cytoplasm is always scanty, i. e., the individual ameboid processes are delicate or thin, and the parasite has but little bulk or density. While forms resembling "rings" do occur, yet, owing to the abundance of all kinds of irregular forms, it is certainly difficult to find quite typical "signet" rings.

Laterally applied parasites also occur, but in them the chromatin is not dot-like, as it usually is in the malignant tertian, but practically always rod-like. The nuclear chromatin is out of proportion to the volume of the parasite. It takes the form of bars or rods, strands, curves, forks, patches, etc.; the occurrence of the chromatin in a dot, as in the "ring" forms of other species, is rare. In the web-like protoplasmic processes mentioned above there may be seen several chromatin strands, and not uncommonly one observes a minute dot of chromatin some way from the parasite, or between two portions of the parasite, though the protoplasmic process connecting it with the main mass or masses is so thin as to be invisible. The chromatin masses are frequently angular, the angles jutting into the points at which an ameboid process is given off. Abundance of, and marked irregularity in distribution of, the chromatin masses are characteristic of this parasite.

British Journal of Children's Diseases, London

April, XI, No. 124, pp. 145-192

16 Study of Group of Cases of Chronic Recurrent Diarrhea in Childhood. (To be continued.) F. J. Poynton, R. R. Armstrong and D. N. Nabarro.
17 Mechano-Therapeutics of Chronic Infantile Paralysis (Poliomyelitis Anterior Acuta). E. F. Cyriax.
18 Suppression of Urine in Boy after Operation for Acute Appendicitis, Cured by Double Nephrotomy. A. Evans.
19 Retrospect of Otology, 1913. M. Yearsley.

British Journal of Surgery, London

April, I, No. 4, pp. 549-748

20 *Congenital Elevation of Scapula: Series of Eighteen Cases. H. A. T. Fairbank.
21 *Two Cases of Severe Unilateral Hematuria without Evident Cause. G. Barling.
22 Obscure Case of Ulceration of Nose in Child. Simulating an Epithelioma. D. Nabarro and T. T. Higgins.
23 *Traumatic Sensory Aphasia. V. Z. Cope.
24 *Typhoid Spine: With Report of Two Cases. S. J. Elkin and J. Halpenny.
25 Late Results of Three Cases of Transplantation of Fibula: with Remarks on Process of Growth and Physiologic Development of Transplanted Bone. C. J. Bond.
26 Radical Operation for Chronic Osteomyelitis. S. Pringle.
27 *Excision of Diaphysis of Humerus with Full Functional Recovery. A. J. Evans.
28 Two Cases of Injury to Pancreas. G. G. Turner.
29 *Acute Intestinal Obstruction Due to Rare Causes. J. Marnoch.
30 Loose Bodies in Knee: Special Reference to Their Etiology and Growth. R. H. A. Whitelocke.
31 Two Cases of Complete Division of Duodenum at Duodenojejunal Junction Treated by Closure of Divided Ends and Gastrojejunostomy. H. Collinson and L. R. Braithwaite.
32 Case of Intussusception of Vermiform Appendix. R. J. McConnell and W. Wilson.
33 Arterial Supply of Rectum and Pelvic Colon. H. Drummond.

20. Congenital Elevation of Scapula.—The chief features of the series of 18 cases of congenital elevation of the scapula analyzed by Fairbank may be summarized as follows: The sex of 8 was male, of 10 female. The right scapula was affected in 6 cases, the left in 9, while in 3 the deformity was bilateral. The scapula was anchored to the spine in 7 cases; in 2 of these, both scapulae were fixed, in one by a bridge of bone on both sides, and in the other by bone on the right and fibrous tissue on the left. Scoliosis was present in 10. In at least 4 a wedge-shaped half vertebra was present. In one of these, at the age of 2 years, there was no curve, but by 6 years a low dorsal curve, toward or rather below the elevated scapula, and quite unconnected with the half vertebra, had developed. In 5 the dorsal convexity was directed toward the raised shoulder, in 4 away from it, while in 1 case with an abrupt curve, both scapulae were elevated.

Partial fusion of ribs was seen in 7 cases, one of these being open to doubt. An unmistakable cervical rib was present in 2 cases only. In 2 there was total suppression of one or more vertebrae while in 4 cases, including the two just mentioned, there was present a half or wedge-shaped vertebra.

In 3 other cases the shortness of the neck made suppression of vertebrae more than probable, but the difficulties encountered in taking roentgenograms prevented a definite decision being arrived at. In 2 cases a projection or exostosis was present at the vertebral border of the scapula. With regard to other deformities present, 3 cases displayed torticollis, 2 of them having both scapulae elevated. The radius was absent in 1, the pectoral muscles were imperfect in 2, and facial asymmetry was noted in 2, only one of which was associated with torticollis.

21. **Severe Unilateral Hematuria.**—The control of the renal circulation during section of the kidney is obtained by Barling, by clamping the pedicle with rubber-covered forceps and placing several mattress sutures in the capsule, tightening them all simultaneously to take the strain off any individual suture and then tying them. When this has been done the clamp is removed and the kidney quickly replaced and compressed firmly inside the wound for several minutes with the hand over gauze pads; this Barling has generally found effective in stopping the bleeding.

23. **Traumatic Sensory Aphasia.**—According to Cope traumatic sensory aphasia is often, if not generally, due to subdural hemorrhage pressing on the cortical sensory speech centers. The aphasia affects the visual more than the auditory speech center. If treated expectantly, recovery is generally incomplete, and there is a risk of epileptiform convulsions developing later. Treatment by trephining and removal of the clot is the best course.

24. **Typhoid Spine.**—In 1909 Halpenny reviewed 72 cases of typhoid spine reported in the literature up to December, 1908. To this the authors add 20 cases reported since that time. These, with the 2 now cited, make 94 in all. A study of the cases since 1908 reveals the fact that when treatment is commenced early, spinal deformity rarely occurs, convalescense is short and recovery is nearly complete—that is, the movements of the spine approach more nearly to the normal.

27. **Excision of Diaphysis of Humerus.**—A female child, aged 5, was admitted to the hospital on Jan. 21, 1913. A week before admission she had fallen down-stairs, injuring her right arm. The case presented the obvious features of severe acute osteomyelitis involving the entire diaphysis. An incision was at once made down to the humerus and pus evacuated. The general condition of the patient was very critical at the time of admission, and therefore nothing more was done beyond employing free drainage. The local infective process appeared to have attacked both epiphyseal ends of the diaphysis simultaneously, the infection rapidly spreading up and down the bone.

March 3, 1913, the patient's general condition having improved, an incision was made through the deltoid muscle down to the bone, the shaft of which was found to be devoid of periosteum and surrounded by an irregular "involucrum" of new bone. The whole shaft, consisting of sequestrum and involucrum, was then withdrawn through the upper wound. The arm now consisted of nothing more than a flaccid tube of periosteum and granulation tissue, surrounded by the soft parts. It was placed in a specially moulded poroplastic splint fixed above to the axilla and below to the forearm at the elbow, the limb being so fixed that the muscles of the arm were fully extended and no contraction could take place. Drainage was provided above and below. The subsequent course of the convalescence was uneventful. Roentgenographic records, taken at regular intervals showed regeneration of bone taking place very rapidly along the whole length of the periosteal tube, the growth appearing as rapidly in the center of the limb as at its epiphyseal ends.

Twelve months after operation, the mobility of the shoulder and elbow-joint is unimpaired; full flexion and extension are present in the latter, while the movements at the shoulder are free in every direction. The right arm is shorter than the left to the extent of ⅝ inch; it is as strong and flexible as the other. The child can accomplish any sort of gymnastic exercise without pain or loss of power. The cosmetic result is excellent, the contour of the limb perfect, and the slight amount of shortening is difficult to detect, the healed scars being the only observable blemish.

29. **Acute Intestinal Obstruction.**—Four cases are reported by Marnoch. The first was caused by a volvulus of the cecum, the second by repeated operation for obstructive attacks due to congenital abdominal abnormalities; the third by an intersigmoid hernia and the fourth by a hernia into the paraduodenal fossa.

British Medical Journal, London

April 25, I, No. 2782, pp. 897-948

34 *Therapeutic Value of Gases Introduced into the Pleural Cavity. H. M. Davies.
35 *Need for Research in Antenatal Pathology. A. Routh.
36 Pituitrin in Labor. P. A. Hendley.
37 Two Cases of Pregnancy in Uterus Subseptus. R. C. Buist.
38 Carcinoma of Stomach: Gastrectomy. R. Jamison.
39 Association of Erythema Nodosum and Tuberculosis. Report of Six Cases. J. O. Symes.
40 Experiences of Surgeons in Sclerocorneal Trephining. R. H. Elliot.
41 Multiplication and Infectivity of T. Cruzi in Cimex Lectularius. B. Blacklock.

34. **Value of Gases Introduced into Pleural Cavity.**—Oxygen replacement according to Davies is not only of great value as a method of removing pleural effusions and exposing the lung for radiographic purposes, but it is the only efficient means we possess for the treatment of chronic cases of tuberculous pyopneumothorax. It is possible in these cases, by replacing the gas and fluid by oxygen, gradually to draw out the lung without producing any symptoms of distress or discomfort. The process must be repeated on three, four or even five occasions at intervals of two or three weeks, leaving on each occasion an increasingly high negative pressure. If the lung is completely fixed by adhesions, it cannot be made to reexpand, but it will be found that the tendency for the fluid (at first pus, and then serum) to reaccumulate will rapidly diminish—a state of affairs which is greatly appreciated by the sufferer.

35. **Need for Research in Antenatal Pathology.**—Routh urges obstetricians to look on research into antenatal pathology as only one of the methods which must be advocated in order to deal with statistics, and with the supply of material for research and for help in the diagnosis, prophylaxis and treatment of antenatal diseases, for without associated methods any large reduction of the antenatal death-rate is impossible.

Journal of Laryngology, Rhinology and Otology, London

April, XXIX, No. 4, pp. 169-224

42 Intranasal Treatment of Lachrymal Disease. D. R. Paterson.
43 Histology of Enucleated Tonsils. W. Wingrave.
44 Reports for Year 1913, from Ear and Throat Department of Royal Infirmary, Edinburgh. J. K. M. Dickie.
45 New Theory of Hearing. F. P. Sturm.

Journal of Obstetrics and Gynecology of British Empire, London

March, XXV, No. 3, pp. 113-174

46 Uncontrollable Uterine Hemorrhage. Functional Disturbance. H. Briggs and R. A. Hendry.
47 Stillbirths Registration. J. W. Ballantyne.
48 Case of Chorionepithelioma Presenting some Unusual Features. H. Williamson and C. Noon.
49 Ectopic Pregnancy Occurring Twice in Same Patient. D. Dougal.
50 Left Parovarian Cystoma Causing Torsion of Fallopian Tube, Pedicle Containing Fallopian Tube, Fimbria Ovarica and Mesosalpinx. G. B. Marshall.
51 Early Tubal Gestation in Malformed Right Tube. Uterine Fibroid. Large Cystic Ovaries. G. B. Marshall.

Journal of Tropical Medicine and Hygiene, London

April 15, XVII, No. 8, pp. 113-128

52 Certain Protozoa-Like Bodies in Case of Protracted Fever with Splenomegaly. A. Castellani.

Lancet, London

April 25, I, No. 4730, pp. 1163-1232

53 Modern Theories Concerning Hysteria. J. A. Ormerod.
54 Intestinal Toxemia. D. C. Watson.
55 *Drainage Tube in Abdominal Surgery. J. E. Adams.

56 Wild Monkey as Reservoir for Virus of Yellow Fever. A. Balfour.
57 *Vaccination against Hay-Fever. J. Freeman.
58 Use of Omnopon Scopolamine Combined with Local Anesthesia in Ophthalmic Surgery. A. M. Ramsay.
59 Extraperitoneal Ureterolithotomy Through Median Suprapubic Incision. G. Whitehead.

55. **Drainage Tube in Abdominal Surgery.**—Owing to the adhesions which rapidly form around drainage tubes Adams claims their value is distinctly limited in the treatment of peritoneal infections. Since the tissues of the abdominal wall possess a much lower degree of resistance than the peritoneum, drainage of the former may frequently be called for where drainage of the peritoneum is not necessary. The presence and pressure of a drainage tube in peritonitis may determine the transudation of organisms from the lumen of the gut to the peritoneal cavity. This secondary infection is of less serious importance than might be supposed owing to the fact that the wound area has usually been shut off by surrounding adhesions before this occurs. To prevent adhesions between drainage tubes and adjacent structures the tube should always be rotated whenever the dressing is done, and its gradual withdrawal from the wound should be begun from the third day after operation. Gauze drains, Adams believes, are more properly termed gauze dams, except when used in the form of a small wick down the lumen of a tube as a "cigarette drain," and there the capillary action of the gauze may be of value in securing the escape of thin inflammatory fluid. In the case of thick pus they more often act as a cork at the orifice of the wound than as an external drain.

57. **Vaccination against Hay-Fever.**—Hay-fever treatment by active immunization with a pollen vaccine whether judged by statistics or by the experiential method, Freeman says, has succeeded, and the immunity thus acquired seems to last for one year at least after treatment has been discontinued.

Annales de Médecine et Chirurgie Infantiles, Paris

April 15, XVIII, No. 8, pp. 249-284

61 Social Service in the Hospitals. Nageotte-Wilbouchewitch.
62 Infant Welfare Work. (La pouponnière de la clinique médicale infantile à l'hôpital de Nancy.) G. J. Ramu.
63 *Prophylaxis and Treatment of Functional Heart Disorders in Children. Nobécourt.
64 Direct Sunlight in Treatment of Internal Diseases. (Héliotherapie.) Delachaux.

63. **Prophylaxis and Treatment of Functional Heart Disturbance in Children.**—Nobécourt emphasizes the importance of the injury liable to be felt by the cardiovascular apparatus from a too sedentary life, unhygienic attitudes in school and overstudy. Sitting still too long and lack of exercise increase the work of the heart as they reduce the activity of the peripheral circulation, while contributing to constipation, anemia and dyspepsia, all of which in turn react on the heart. Mild muscular exercise counteracts all these, but if the exercise is excessive or too long continued the children suffer equally from the other extreme. The circulation in children adapts itself with extreme facility to variations in movement, but prolonged effort is impossible and especially injurious if persisted in. Walking, to be a useful exercise, should be brisk and kept up for some time. It is not always good for children, and often entails a more or less durable dilatation of the heart. Games and sports should not be allowed to become competitive battles.

Gymnastic exercises are often directly injurious; the holding of the breath retards the circulation and fosters congestion. Swedish gymnastic exercises affect the circulation favorably but children find them tedious. Mental work dilates the carotid arteries; the heart-beat is liable to become accelerated, and the radial pulse smaller while the blood-pressure rises. He adds that when there is already some functional heart disturbance, there is still greater need to supervise the physical exercise, graduating it to the special case, as the main therapeutic reliance, supplemented by hydrotherapeutic measures, massage, care in the diet and measures to soothe the nervous system, respiratory exercises, etc. Abnormal excitability of the heart may be combated by valerian and belladonna, alternating each for twenty days. Or atropin can be given in the daily dose of a tenth of a milligram for each year of age. This is especially useful in paroxysmal tachycardia.

Archives des Maladies du Cœur, etc., Paris

April, VII, No. 4, pp. 225-288

65 Regional Myocarditis; Six Cases. E. Lenoble.
66 Electric Action of the Human Heart. (Action électrique du cœur humain.) A. D. Waller.

Bulletin de l'Académie de Médecine, Paris

April 7, LXXVIII, No. 14, pp. 523-544

67 *Treament of Acute Poliomyelitis with Serum from Persons Who Have Had Epidemic Poliomyelitis. A. Netter.
68 Prevalence of Eruptive Diseases in the Army Determined by Immunity Previously Acquired. (Causes de l'absence d'épidemies de fievres éruptives dans le Ier corps d'armée et de son bon état sanitaire général.) G. H. Lemoine.
69 Raphael's Last Illness, Death at 37. (Conjectures sur la mort de Raphael.) Cabanès.

April 14, No. 15, pp. 545-588

70 Various Therapeutic Applications of Emetin and Ipecac. L. E. Bertrand.
71 Pneumococcus Thrombosis of Cerebral Arteries. P. Menetrier.
72 *Gymnastics of the Blood-Vessels by Alternating Hot and Cold Bath. (La gymnastique vasculaire par le bain progressif alternant.) Dausset and A. Hanriot.
73 Therapeutic Paraffin Baths. (Kérithérapie.) B. de Sandfort.
74 *Action of Antirennin on the Digestibility of Milk. L. Gaucher.

67. **Serotherapy of Acute Poliomyelitis.**—Netter makes intraspinal injections of the serum from persons who have had poliomyelitis at some time in the past, assuming that the serum contains antibodies which will have a therapeutic action. In one case reported an athletic man of 34 developed severe acute poliomyelitis but was apparently recovering when the eighth day his legs became paralyzed, with retention of urine and loss of sensibility up to the costal arch, all showing a progressive course, with an extremely serious outlook. The next morning 7 c.c. of serum from a person who had had poliomyelitis seven years before were injected into the spinal cavity. By this time the anesthesia reached to the nipples, but by evening of the same day the patient could "feel his toes," and complete recovery gradually followed. He was given ten injections in eleven days, a total of 66 c.c. The serum came from eight persons. Netter has applied this treatment before in four other cases, but with such timid technic and so few injections that although marked benefit was apparent each time yet some paralysis was left or the patients succumbed sooner or later.

72. **Alternating Hot and Cold Bath.**—Dausset and Hanriot recorded the blood-pressure, etc., in a healthy person in a warm bath; then hot water was added to bring the water to 42 or 50 C. After one or two minutes of this, cold water was added until the temperature was felt too cold. The vascular system is exercised to a remarkable extent by these temperature changes in the twenty-minute bath, but the changes are so gradual that there is no sudden shock. They say that oxidation processes are promoted, heat production is regulated, and sluggish elimination whipped up while the reflexes are brought back into physiologic limits.

74. See Paris Letter, May 9, p. 1488.

Journal de Médecine de Bordeaux

April 12, LXXXV, No. 15, pp. 245-258

75 Weaning the Baby. (Sur quelques points relatifs au sevrage.) E. Leuret. Commenced in No. 14.

April 19, No. 16, pp. 261-274

76 Hypochondriac Paranoia. (Histoire d'un délire de persécution à base d'hallucinations cénesthésiques.) Authier and R. Lafargue.

Lyon Médical, Lyons

April 5, XLVI, No. 14, pp. 749-804

77 Puzzling Disturbances from Cervical Ribs in Elderly Woman. C. Lesieur, Kocher and Milhaud.

April 12, No. 15, pp. 805-860

78 Prolonged Priapism Unaffected by Medical Treatment; Cured by Incision and Drainage of the Corpora Cavernosa. A. Chalier and J. Gaté.
79 Coma without Acetonuria in a Case of Diabetes. Revillet.

Presse Médicale, Paris

April 15, XXII, No. 30, pp. 285-292

80 *Pressure on the Spinal Cord from Bony Excrescences on the Spine. (Compressions de la moelle et de la queue de cheval par exostoses vertébrales.) P. Le Damany.
81 Diagnosis of Alopecia in Children. R. Burnier.

April 18, No. 31, pp. 293-300

82 Tuberculosis Primary in the Child; Reinfection in the Adult. (Les étapes de la bacillose de Koch chez l'homme.) L. Bernard.

80. **Vertebral Exostoses.**—Le Damany remarks that these excrescences are comparatively frequent; Regnault found them on sixteen of sixty-three cadavers examined, but as they usually grow outward they cause no nervous disturbances. In a case of his own, however, roentgenoscopy showed that the growth was compressing the cauda equina, explaining the clinical picture. The symptoms in these cases come on extremely gradually, and after removal of the growth they retrogress nearly as slowly. In his case months elapsed before the symptoms subsided, but this rendered all the more remarkable the fine result finally realized. The first symptoms had been pain in the legs which had been ascribed to and treated as sciatica without benefit. The man was given a course of treatment for syphilis, although the Wassermann test was constantly negative. By the end of the year the pains and motor disturbances indicated plainly pressure on the cauda equina, and the exuberant bone growth was removed by resection of the posterior arches of the third and fourth lumbar vertebrae.

Revue Mens. de Gynécol., d'Obstétrique et de Pédiatrie, Paris

March, IX, No. 3, pp. 161-232

83 *Removal of Ovaries Cures Hemorrhage from Myomas. (Valeur actuelle de la castration ovarienne dans les hémorragies des fibromyomes. Opération d'Hégar.) G. de Rouville.
84 Anatomy and Physiology of Normal Infants. (L'enfant dans les deux premières années.) L. Devraigne.
85 *Articular Rheumatism and Endocarditis of Puerperal Origin; Recovery after Curetting. L. Pierra.

83. **Ovariectomy for Hemorrhage from Myomas.**—De Rouville has removed the ovaries for this cause in seven cases, *the hemorrhages for which the fibromyomas were responsible* being extremely severe and the patients too anemic to stand hysterectomy. The bleeding stopped at once after the castration. There was no recurrence except very slight in one case.

85. **Articular Rheumatism of Puerperal Origin.**—The case reported by Pierra shows anew how infection originating in the genital organs may work insidiously for several months before making itself apparent. It demonstrated further that a cure may be realized even at this late stage by eradicating the focus. His patient was a woman of 28 who developed subacute articular rheumatism and endocarditis five months after an infected abortion. No benefit was realized from a month or more of the ordinary measures, including the salicylates, but after straightening and curetting the uterus the temperature dropped to normal and rapid recovery followed, except that signs of mild mitral insufficiency still persist to date. The patient has passed through a normal pregnancy since. Articular rheumatism of puerperal origin does not attack so many joints as ordinary articular rheumatism. It generally settles down in one joint after a time—the shoulder in his case—and stays there. The rapid development of the mitral insufficiency in this case could be explained only by the slumbering infectious process in the uterus.

Semaine Médicale, Paris

April 22, XXXIV, No. 16, pp. 181-192

86 Differentiation between Peripheral and Central Paralysis of Auditory Nerve. (De la perception des mouvements de rotation dans le syndrome des tumeurs du nerf acoustique et de l' "hémiavestibulie" de siège central.) L. Bard.

Archiv für Verdauungs-Krankheiten, Berlin

XX, No. 2, pp. 147-298

87 Pathologic-Anatomic Study of Experimental Beriberi. (Reispolyneuritis.) K. Schnyder.
88 Primary Gastric Sarcoma. M. Schiller.
89 Pancreatic Diseases; Five Cases. G. A. Friedmann (New-York).
90 *The Vitamins and Subjective Factors in Eating. (Diät und diätetische Behandlung vom Standpunkte der Vitaminlehre und vom Standpunkte der Lehre der diätetischen Küche.) W. Sternberg.
91 Unreliability of the Glycyltryptophan Test for Gastric Cancer. B. Hauschild.
92 Nut Milk in Digestive Diseases, etc. (Neuere Gesichtspunkte für die diätetische Behandlung des Ulcus ventriculi und duodeni, der Hypersekretion, der motorischen Insuffizienz, einiger Stoffwechsel- und Ernährungsstörungen, Herz- und Nierenerkrankungen, mit vegetabler Milch.) A. Fischer.

90. **Importance of Subjective Factors in Eating.**—Sternberg has long been preaching that food is liable to fail of its chief purposes unless it appeals to the senses of sight, smell and taste, with variety in the mode of preparation, appetizing seasoning and the dishes freshly prepared. He thinks that much of what we are now calling "vitamins" is included in the above. He has long been reiterating that the housekeeper's main dietary task is to cultivate the subjective factors, but as a rule this is disregarded as of little moment. He insists that our senses of smell and taste recognize chemical changes more sensitively than we can detect them with chemical tests. Warmed-over dishes, especially vegetables, do not relish as at first; some chemical change has occurred in them. This change has rendered them less wholesome for the person who finds them less palatable. Loss of appetite, disgust, nausea, vomiting and finally some dietary deficiency disease, form the sequence, and loss of relish should warn that we have entered on the downward slope. Sternberg emphasizes anew that the science of cooking is far more than merely applied chemistry and physics and application of heat. It is rather applied physiology of the senses, applied esthetics and applied psychology. It is a matter of taste in the widest sense of the term.

Beiträge zur Klinik der Tuberkulose, Würzburg

XXX, No. 2, pp. 227-362. Last indexed April 11, p. 1204

93 *The Development and Spread of Pulmonary Tuberculosis. (Pathologisch-anatomische und klinische Betrachtungen der Lungenphthise.) K. Nicol.
94 Gold Cantharidin and Tuberculosis. T. Spiess and A. Feldt.
95 *Protest against Newspaper Misstatement Regarding Friedmann Treatment. Pischinger, Ritter and Schellenberg.

93. **Development of Pulmonary Tuberculosis.**—Nicol's long article is accompanied with thirteen plates, one colored, ten illustrations in the text and a chart proposing a more accurate system of nomenclature, based on his research here reported. It has demonstrated, he says, that the tuberculous process in the lung spreads from above downward, and that the outlook is more unfavorable the lower its location.

95. **Protest.**—The officers of the German association of sanatorium physicians (Vereinigung der Lungenheilanstaltsärzte) here repeat their official protest against misleading statements in the lay press in regard to their attitude toward Friedmann's remedy for tuberculosis. They state that at their recent annual meeting at Berlin about half of the members went in a body to Friedmann's quarters to inquire about his remedy and see its mode of use. Few had used the remedy and they only on a very limited scale, and after their call on Friedmann many expressed great doubt in regard to the "success" claimed by Friedmann. An exaggerated account of the call appeared at once in some American papers, claiming that the entire association had visited Friedmann, that the members had reported treatment of 40,000 patients with the remedy, and that the results were phenomenal, the association tendering Friedmann a banquet—none of which they reiterate is true. (See The Journal, April 18, 1914, p. 1273.)

Beiträge zur klinischen Chirurgie, Tübingen

XC, No. 1, pp. 1-246

96 Experimental Production of Gastric and Duodenal Ulcers. W. Gundermann.
97 Tubercle Bacilli in the Blood-Stream with Surgical Tuberculosis. W. Haas.
98 Treatment of Appendicitic Peritonitis. Haeberlin.
99 Elephantiasis of the Penis Successfully Treated by Draining into Abdominal Wall with Implanted Veins. S. P. Janssen
100 Cystic Fibrous Ostitis of the Skull. P. Frangenheim.
101 Familial Bone Growth on the Jaws. (Hyperostosen der Kiefer.) P. Frangenheim.
102 Intra-Osseous Hygroma. P. Frangenheim.
103 Roentgenotherapy of Actinomycosis. E. Sardimann.
104 Xanthomas of Skin and Tendons. H. Hoessli.
105 Electric Injuries of the Skull. (*Schädelverletzungen durch elektrischen Starkstrom.*) G. Langer.

Berliner klinische Wochenschrift

April 20, LI, No. 16, pp. 725-772

106 Survival of Mouse Cancer Cells at Incubator Temperature. (Lebensdauer der Mäusecarcinomzellen bei 37 C.) B. R. G. Russell and W. E. Bullock.
107 Infant Feeding with Pulverized Vegetables, etc. (Ueber Säuglingsernährung nach physiologischen Grundsätzen mit Friedenthal'scher Kindermilch und Gemüsepulvern.) H. Friedenthal.
108 *Influence of Hydronephrosis on Infection of the Kidney. (Harnstauung und Niereninfektion.) H. Harttung.
109 Microscopic Anatomy of Skin of Egyptian and Peruvian Human and Animal Mummies. (Aelteste Saugetier- und Menschenhaut.) J. Heller.
110 *Lack of or Excess of Iodin as Factor in Thyroid Disease. (Zur Theorie von Morbus Basedowii, Myxödem, Kretinismus und Gebirgskropf. Hyper- und Hypothyreodismus.) Grumme.
111 Absorption of Beta, Gamma and Roentgen Rays. B. Keetman.
112 Present Status of Intratracheal Insufflation. S. J. Meltzer. Commenced in No. 15.
113 Orthopedic Welfare Work for Schoolchildren at Berlin. M. Böhm.

108. **Stasis in the Kidneys and Infection.**—Harttung threw a ligature around a rabbit ureter and studied the changes which followed in the kidney above. Staphylococci injected intravenously passed through the sound kidney without apparently injuring it, but in the kidney with ligated ureter severe lesions developed in all. *The stasis in the kidney* injures its tissues so that they become abnormally permeable for bacteria.

110. ***Lack or Excess of Iodin as Factor in Thyroid Diseases.***—Grumme presents arguments to sustain the view that a lack of metabolized iodin is the cause of myxedema, while exophthalmic goiter is the result of an excess of nonmetabolized iodin. In other words, the primary cause of myxedema is a deficiency of iodin in the food, while the cause of exophthalmic goiter is a functionally weak thyroid with a sufficiency or an excess of iodin in the food. Experience has already demonstrated that cretinism, myxedema and endemic goiter are favorably influenced by administration of organic thyroid-iodin or thyroid extract. On the other hand, iodin in any form, organic or inorganic, or food containing iodin, is distinctly injurious in exophthalmic goiter, and also in ordinary goiter, not of the endemic type, but which is often a preliminary phase of exophthalmic goiter. Endemic goiter can thus be effectively treated with iodin but it is strictly contra-indicated in the sporadic form outside of the mountains.

Deutsche medizinische Wochenschrift, Berlin

April 16, XL, No. 16, pp. 785-832

114 *Treatment of Acute Threatening Conditions in Tropical Diseases. P. Mühlens.
115 Dissolving Action of Carlsbad Water by the Mouth on Human Gall-Stones Implanted in Dog's Gall-Bladder. (Gallensteinlosende Wirkung des Karlsbader Wassers.) H. Leo.
116 Acute Articular Rheumatism a Streptococcus Pyemia. (Zur Aetiologie des akuten Gelenkrheumatismus.) G. Singer.
117 Levulose Test of Functional Capacity of the Liver. T. Arai.
118 *Non-Operative Treatment of Cancer. (Weitere Erfahrungen bei der nicht operativen Behandlung des Krebses.) Kronig and Others. Commenced in No. 15.
119 Treatment of Febrile Abortion. (Wie kann man üble Ausgänge bei fieberhaften Aborten am besten vermeiden?) W. Benthin.
120 *Iodin in Treatment of Arteriosclerosis. J. Schwalbe. Commenced in No. 15.
121 Testimony of the Physician as Witness and Expert. (Der Arzt als Zeuge und Sachverstandiger.) Seeger.
122 From the Balkan Wars. (Kriegschir. Ergebnisse aus dem Balkankrieg, 1912-13.) L. Dreyer. Commenced in No. 14.

April 23, No. 17, pp. 833-888

123 *Clinical Experience with Friedmann's Remedy for Tuberculosis. (Klinische Erfahrungen mit dem Friedmannschen Tuberkulose-Heilmittel.) L. Brauer, Gaugele and O. Schussler.
124 *Lupus and Friedmann's Remedy for Tuberculosis. (Behandlung des Lupus mit dem Friedmannschen Tuberkulose-Heilmittel.) A. Brauer.
125 *Bacterial Contamination of Friedmann's Remedy for Tuberculosis. Biermann.
126 Treatment of Tuberculosis with Turtle Tubercle Bacilli. (Zur Behandlung der Tuberkulose mit Schildkröten-Tuberkelbazillen.) M. Piorkowski.
127 Inflammation and Mechanical Obstruction as Factors in Jaundice. (Wodurch entsteht vorwiegend der reell-lithogene Ikterus?) B. Riedel.
128 Combined Salvarsan-Mercury Treatment of Syphilis. W. Scholtz.
129 *After-Pain with Operations under Local Anesthesia. (Nachschmerz.) A. Schlesinger.
130 Serious Disturbances from Glycerin-Filled Bladder Used as Metreurynter. (Zur Ballonbehandlung mit tierischen Blasen.) K. Frankenstein.

114. **Acute Threatening Conditions in Tropical Diseases.**—Mühlens emphasizes that we have now in salvarsan a powerful aid in combating relapsing fever. Given in time the severe symptoms subside at one stroke. He says that the confidence in salvarsan is now so great that in research at Tunis men deliberately inoculated themselves with relapsing fever by means of infected lice, the disease being promptly aborted with salvarsan as soon as it developed. He advises an intravenous dose of from 0.2 to 0.5 gm. according to age. One injection is generally enough to prevent recurrence, but a second, six or eight days later, will clinch the matter. When salvarsan or neosalvarsan is not available, symptomatic measures must be the reliance. Stimulants and saline infusion may be urgently needed at the beginning of the crisis on account of the danger of heart failure. He warns further that in the second stage of sleeping sickness, the patient must be constantly supervised on account of the tendency to suicide or homicide.

118. ***Non-Operative Treatment of Cancer.***—The Freiburg clinic seems to have carried radiotherapy of cancer farther than has been done elsewhere, and this communication analyzes *the experiences from the clinical, experimental and* physical standpoints. The best results were always obtained when the dosage was as large as possible and crowded into the shortest possible time. It is thus possible to induce the complete retrogression of deep-seated cancers without noticeable injury of sound tissue, and in some cases two years have elapsed without sign of recurrence. Krönig and his coworkers prefer the radiotherapy even for operable cases if conditions permit effectual cross-fire application of the Roentgen or mesothorium rays. Time alone will decide whether the tendency to recurrence is greater or less with radiotherapy. They insist that after operative removal of a cancer the region should be exposed to the rays at regular intervals for two years at least.

120. **Influence of Iodin on Non-Syphilitic Arteriosclerosis.**—Schwalbe sent a question-blank to a number of leading German clinicians to inquire their views on and experience with iodin in treatment of arteriosclerosis. He summarizes their answers, commenting on the wide divergence of ideas and technics, and emphasizing that none seemed to have a scientific basis for the use of iodin in arteriosclerosis. On the other hand, there seem to be so many drawbacks to the method, so much danger of injury from the iodin, especially in regions where goiter is common, that he sums up his conclusions in a solemn warning against the routine use of iodin or iodids in non-syphilitic arteriosclerosis.

123-125. ***Friedmann's Remedy for Tuberculosis.***—Here are the five articles relating experiences with this remedy which were summarized from advance sheets in the Berlin Letter, dated April 16. Biermann says he found the contents of the ampules contaminated with apparently pyogenic germs but they did not prove pathogenic when animals were inoculated with them. L. Brauer's impressions of the remedy were decidedly unfavorable, severe reactions being observed, and he knows of one person in Germany and two in Switzerland who died in a few days after the *injection with its severe* reaction. One of Hegler's patients had a chill, fever and extreme prostration after the injection, rapidly wasting *away after it and dying in six weeks.* Brauer reiterates that nothing was observed to indicate a favorable influence from the treatment, while the contamination with other microbes *renders this method of treatment a hazardous experiment.* Gaugele and Schüssler analyze their experiences with thirty-four children. One child died of miliary tuberculosis, and they say that the end seemed to have been hastened by the remedy. In 21 cases there was much suppuration, with high fever, and in 13 cases considerable infiltration but no actual abscess. They add that since the abscesses have healed the general condition seems improved. The children's appetite is better than before the injections, but no change can be detected with roentgenoscopy of the bone and joint processes and there has been no modification in the reaction to the tuberculin tests. A. Brauer reports the intramuscular application of the remedy in lupus and states that benefit was apparent in every case and with all forms of lupus, but that the improvement lasted only for ten or fourteen days, in no instance longer than three weeks. After a few weeks of apparent inactivity the affection seemed to become aggravated. In none of the cases by the end of the sixth week was the condition so good as in the cases given the ordinary local treatment for the same length of time. He thinks that the lack of durable effectual action on the visible lupus lesions is an intimation that internal lesions are not liable to be affected any more favorably.

129. **After-Pain Following Operations Under Local Anesthesia.**—Schlesinger says that it is the amount of fluid rather than the anesthetic which causes the pain, and that it is liable to be more severe in dense and tightly stretched tissues, other things being equal. Different persons vary in their sensation of pain, but he advises against injecting any fluid into inflamed tissues as this is almost certain to entail severe after-pain. The unusual number of nerve terminals and the compact, tightly stretched tissues render the after-pain peculiarly intense and tenacious with operations on the finger and toes. The local anesthetic should be injected into the loose tissue at the base of and between the fingers. When this is not possible, the amount of fluid used should be reduced to the minimum. An operation on a dermoid in the cheek, or a furuncle on the arm, with no zone of inflammation around it, is scarcely liable to entail after-pain. When the nature of the tissues renders it probable, it is better to refrain from local anesthesia or else give some sedative beforehand.

Medizinische Klinik, Berlin

April 19, X, No. 16, pp. 665-710

131 Present Status of Research on the Protective Ferments. (Abwehrfermente.) E. Abderhalden.
132 *Muscular Rheumatism and Neuralgia. A. Schmidt.
133 Lymphogranulomatosis Developing from Acute Hyperplastic Conjunctivitis. A. Elschnig.
134 Pathogenesis of Cholelithiasis. K. Grube.
135 Influence of Circular Resection of Stomach on Its Secretion and Motor Functioning. M. Faulhaber and E. v. Redwitz.
136 Electric Exercising of the Muscles in Treatment of Obesity. (Muskelarbeit in der Behandlung der Fettsucht.) Forschbach.
137 Organ Therapy and Prophylaxis of Postoperative Tetany. K. Vogel.
138 Modification of Electrocardiogram by Carbonated Baths in Heart Disease. K. Brandenburg and A. Laqueur.

132. **The Problem of Muscular Rheumatism.**—Schmidt is convinced that the majority of cases of pain in muscles and nerves are of infectious or toxic-infectious origin. He has been confirmed in this view by the frequent complete cure of old rebellious myalgia and neuralgia after removal of the tonsils or evacuation of an empyema. The sudden onset of lumbago or the like after an abrupt movement he explains as the injury from the toxin on the fibers strained by the movement. Muscular rheumatism is in reality merely a neuralgia of the sensory nerve fibers in the muscle. He found among fifty cases of sciatica that in 86 per cent. other muscles or nerve domains were painful, spontaneously or on pressure, as well as the sciatic domain. There was pain in the lumbar region in 54 per cent. and in the femoral nerve region in 22 per cent. The knee-jerk was lost in 16 per cent. As the legs are used so much more than the arms, the greater chance for overstrain explains the predilection of the so-called muscular rheumatism for the legs.

Mitteilungen a. d. Grenzgebieten der Med. und Chir, Jena

XXVII, No. 4, pp. 575-806. Last indexed March 7, p. 817

139 *Chronic Tetany after Removal of Parathyroid Glands in Animals. A. Tanberg.
140 *Tuberculin Tests of Animals after Inoculation. (Die subkutane und die intrakutane Tuberkulininjektion als Mittel zur Diagnose des Tuberkelbacillus im Tierversuche.) M. Jacoby and N. M. Wildungen.
141 Double Refracting Lipoids in the Mesentery and in a Mesenteric Sarcoma. W. Lutz.
142 *Leukocytosis with Hemorrhage in the Peritoneum. H. Hoessli.
143 *Experiments with Coagulation-Promoting Substance Derived from Animal Blood-Platelets. (Wirkung der intravenösen und der subkutanen Injektion von Koagulen Kocher-Fonio am Tierversuch, nebst einigen therapeutischen Erfahrungen.) A. Fonio.
144 *Cause of Gastric Ulcer. (Ursache des runden Magengeschwüres.) J. K. W. Kehrer.
145 *Pathologic Anatomy of Exophthalmic Goiter. (Morbus Basedowii.) C. A. Pettavel.
146 Experimental Cirrhosis of the Liver. Induced by Alcohol. K. Isobe.
147 *Pathologic Anatomy of Circumscribed Ossification in a Muscle. (Myositis ossificans.) G. B. Gruber.
148 Experimental Study of Gall-Bladder Functioning. (Zur Funktion der Gallenblase.) P. Klee and O. Klüpfel.
149 *Splenectomy for Blood Disease. H. Eppinger and E. Ranzi.

139. **Tetany after Parathyroidectomy.**—Tanberg succeeded in inducing chronic tetany in animals by removing some of the parathyroids; in some there was a period of several months of latency before the symptoms developed. A meat diet did not seem to influence the tetany but a milk diet had an unmistakably favorable action. Milk apparently contains substances which modify the tetany under these conditions. Benefit was likewise manifested on feeding beef parathyroid glands.

140. **Tuberculin Tests of Animals after Diagnostic Inoculation.**—As early as two weeks after inoculation of the guinea-pig with the suspected sputum or other material, the animal may react to a subcutaneous injection of tuberculin in case of positive findings. Intracutaneous injection of the tuberculin answers the same purpose although the findings are less objective. If a negative response is obtained, the procedure should be repeated a few days later to make sure.

142. **Leukocytosis with Intraperitoneal Hemorrhage.**—Hoessli found 30,000 leukocytes in a previously healthy young woman suddenly taken with symptoms suggesting rupture of a gravid tube, confirmed by immediate operation, with prompt recovery, the leukocytes numbering 8,000 the tenth day. Three similar cases are reported in which the leukocytes ran up to 15,000 or 19,000 in twenty-four hours after the first signs of trouble. Extra-uterine pregnancy was regarded as probable in all but one case in which the symptoms and intact hymen spoke for appendicitis, but the trouble proved to be a ruptured blood-cyst in the right ovary. Some experiments on animals confirmed the fact that sudden large influx of blood into the peritoneum is liable to induce high leukocytosis for about twenty-four hours, even in the absence of all inflammation.

143. **Coagulation-Promoting Substance.** — Blood-platelets from animals, obtained by fractioned centrifuging, sterilized by heat and desiccated, may be dissolved as needed and injected to arrest hemorrhage. This substance has been in use at Kocher's clinic for over a year and Fonio here analyzes the experience with it, showing that it answers the physiologic requirements better than any other method of arresting hemorrhage except transfusion of blood. It has the advantage over the latter that it supplies only the one element needed, and that the doses can be graduated. The method is still in the tentative stage. Various by-effects are observed showing that the best method of administration has not yet been worked out. The pulse and temperature ran up regularly after intravenous injection and sometimes there were pains in the heart region, dizziness, vasodilation in face and neck and headache. By administering part of the solution by subcutaneous injection, the by-effects were much reduced. The more blood the patient has already lost, the smaller the dose required.

144. **Gastric Ulcer.**—Kehrer recalls that pain in the stomach may be due merely to contraction of the muscle, and his experiments on dogs have demonstrated that the expulsion of the blood from the contracted portion of the muscle renders it defenseless against the corroding action of the gastric juice and erosion may occur with its sequel of ulceration. This is especially liable when the muscular contraction occurs predominantly in the pylorus region.

145. **Pathologic Anatomy of Exophthalmic Goiter.**—This fifty-four page article from Kocher's clinic reviews the findings in eight additional exophthalmic goiter cases, the patients from 22 to 49 years old. Three of the patients had died during an operation on the goiter and the others had died of intercurrent disease but of such mild nature that the exophthalmic goiter must be regarded as the actual

cause of death. Considering these cases with a previous series of four, he states that 80 per cent. of those who died in connection with the operation had an abnormally large thymus—a mixed hyperplasia—as also 66.6 per cent. of those succumbing to mild intercurrent disease. Thus the thymus was of normal size in 25 per cent. of the total material. Dilatation and hypertrophy of the heart was the rule, but in one of the severer cases the heart was of normal size. Both liver and kidneys showed fatty degeneration in all the cases, and the chromaffin system showed hypoplasia. The blood findings confirmed Kocher's typical blood-picture, the leukocytes ranging from 4,300 to 8,800; the neutrophils from 36.7 to 71 per cent. and the lymphocytes from 24.3 to 58.6 per cent. although three of these patients had no signs of the lymphatic status and two only slight indications of it. No connection was apparent between the lymphocytosis and persisting thymus.

147. **Ossifying Myositis.**—Gruber adds twelve more to the seven cases he has already published in which there was bone-production in muscle tissue. Some acute or chronic trauma seems indispensable for this chronic osteoplastic myopathy.

149. **Splenectomy in Blood-Diseases.**—The twenty-two cases on record are tabulated and compared and the remarkably favorable influence of the splenectomy is emphasized in the three types of blood disease represented by hemolytic jaundice, cirrhosis of both spleen and liver, and pernicious anemia. In cases of thrombophlebitic enlarged spleen, splenectomy seems to offer little chance for benefit unless one's hand is forced by severe hemorrhages in the gastro-intestinal canal.

Monatsschrift für Kinderheilkunde, Berlin

XII, No. 10, pp. 603-644

150 Eosinophilia and the Exudative Diathesis. A. K. Lifschütz.
151 *Latent Tuberculosis in Infants. T. A. Ossinin.
152 Pedagogic Treatment of Incontinence of Urine and Feces and for Psychopathic Inferiority, etc. J. Girstenberg.

No. 11, pp. 645-686

153 Organic Acids in the Urine of Infants. H. Aron and M. Franz.
154 Leishman's Anemia in Children at Palermo; 110 Cases. R. Jemma.
155 *Transmission of Scarlet Fever by Patients after Discharge from the Hospital. W. Knopfelmacher and R. Hahn.

151. **Latent Tuberculosis in Infants.**—Pathologic anatomists agree that latent tubercular foci are often found in children. Ossinin, in order to determine how frequent they are, examined the bodies of 100 children under 9 months of age. He examined the bronchial, tracheal and mesenteric lymph-nodes by treatment with antiformin, histologic examination and inoculation in guinea-pigs. In ninety-seven cases the results were negative by all three methods. In the other three cases, macroscopic and microscopic examination was negative and there had been no clinical symptoms of tuberculosis, but the antiformin examination and guinea-pig inoculation were positive. That is, there was latent tuberculosis in 3 per cent. of the cases. In all the cases it was in the bronchial and tracheal glands, and not in the mesenteric. This seems to confirm the belief that the respiratory tract is the chief portal of entry for tuberculosis.

155. **Prophylaxis of Return Cases of Scarlet Fever.**—A considerable number of scarlet fever patients after their discharge from the hospital infect other members of the family. The percentage varies according to different authors and in different epidemics from 3 to 10. This may be due to the fact that the patient still carries his own virus or that he acts as a carrier of infection from other patients with whom he has come in contact. Knopfelmacher and Hahn say that the latter would seem to be more generally true, as this form of infection is more frequent in hospital cases than in those treated at home. Therefore our quarantine regulations do not seem to be sufficient. The best thing would be to isolate all cases in separate rooms for twenty days; but this is costly and difficult to enforce. It is therefore recommended that after the disappearance of acute symptoms the patients be placed in a common convalescent room, but not allowed to come again into contact with acute cases.

Münchener medizinische Wochenschrift

April 14, LXI, No. 15, pp. 801-856

156 The Protective Ferments Are Amboceptor Bodies. (Natur der sog. Abwehrfermente.) R. Stephan.
157 Further Research on Protective Ferments. (Nachweis der Wirkung proteolytischer Fermente des Serums mittels Enteiweissungsverfahren und Feststellung der Zunahme der mit Ninhydrin reagierenden Stoffe resp. des Stickstoffgehaltes des Filtrates des abgeschiedenen Eiweisses.) E. Abderhalden and Others.
158 Mode of Action of Actinic Rays. (Zur Theorie der Strahlenwirkung insbes. die Latenzzeit.) H. Heineke.
159 Roentgenoscopy of the Liver. F. Meyer-Betz.
160 Standardizing Digitalis Preparations with Frogs. (Methodik der Wertbestimmung von Digitalis-Präparaten am Frosch.) R. Gottlieb.
161 Posterior Cervix Cesarean Section; Seven New Cases. O. Polano.
162 Advantage of Detaching the Costal Pleura as Supplement to Artificial Pneumothorax. (Verbindung von künstlichem Pneumothorax mit Pleurolyse.) F. Jessen.
163 Intraspinal Injection of Salvarsan and Neosalvarsan. (Zur Technik der endolumbalen Salvarsan- und Neosalvarsantherapie.) Gennerich and E. v. Schubert.
164 Fatality after Neosalvarsan. (Todesfall nach Neosalvarsan.) V. L. Neumayer.
165 Multiple Hemorrhages after Injections of Calomel. P. de Favento.
166 Discussion of Diagnosis by the Protective Ferments. (Adsorptionserscheinungen bei dem Abderhaldenschen Dialysierverfahren.) K. Berner.
167 *Treatment of Tuberculosis. (Zur Heilung der Tuberkulose.) Ponndorf. Commenced in No. 14.

167. **Tuberculin Treatment of Tuberculosis** —Ponndorf analyzes the experiences at Weimar with tuberculin treatment in 153 cases of various forms of tuberculosis: 44 were entirely cured; 37 much improved and 28 improved, while the outcome is not known in 12 cases; 13 showed signs of a reaction and the course of treatment was dropped. He mentions parenthetically that 37 of 59 patients under 25 had more or less of a tendency to goiter, and the thyroid returned to normal size in nearly all those who were benefited by the tuberculin treatment. The same treatment was applied to three diabetics without modifying the diet, and the sugar in their urine dropped from 6 to 2 per cent.; from 4.25 to 1.8; and from between 2 and 5 per cent. to zero after one or two sittings. He uses an amplified vaccination technic.

Wiener klinische Wochenschrift, Vienna

April 16, XXVII, No. 16, pp. 453-496

168 Sporadic Acute Anterior Poliomyelitis. (Heine-Medinsche Krankheit.) L. R. v. Korczinski.
169 *Action of Benzol in Leukemia. F. Spiegler.
170 Diplococcus Lanceolatus in Pemphigus Vesicles. Busson, Kirschbaum and Staniek.
171 Advantages of Intranasal Operative Treatment of Maxillary Sinusitis. (Die Grosse der Kieferhöhlenoffnung bei der intranasalen Operationsmethode und ihre Bedeutung für die Behandlung der Kieferhöhleneiterungen.) L. Rethi.
172 Symptomatology of Pellagra. J. Hatiegan and A. Döri.
173 *Treatment of Cholera with Hypertonic Saline Infusion, Tincture of Iodin and Potassium Permanganate. O. Löwy.
174 Alimentary Galactosuria in Liver Disease. R. Fleckseder.

169. **Benzol in Leukemia.**—Spiegler's patient was a woman of 38 with myeloid leukemia. After two months of benzol treatment, she was much improved but returned five months later with extreme anemia, only 1,400 leukocytes, and multiple hemorrhages in skin and mucous membranes. At one count the leukocytes numbered only 400. Necropsy revealed signs of severe toxic injury of the parenchyma of various organs, especially marked in liver and kidneys. There was no manifest change in the spleen, but the granulated elements disappeared from the blood and lymphocytes took their place. Two similar cases have been published in which the leukocytes dropped under benzol from 988,000 to 1,720 and from 56,000 to 5,300 and later to 200. These experiences impress the necessity for vigilant and repeated control of the blood count as indispensable whenever benzol is being given.

173. **Cholera.**—Thirty-one cholera cases are described to emphasize the efficacy of treatment according to Rogers' method, restoring fluid by subcutaneous injection of 1.5 per cent. salt solution and giving the patients a very weak solution of potassium permanganate to drink copiously. Hot tea and black coffee were also given freely and three times a day ten drops of tincture of iodin. Three died of the eighteen patients treated systematically in this way, all very severe cases.

Zentralblatt für Chirurgie, Leipsic

April 18, XLI, No. 16, pp. 673-712

175 *Improved Technic for Removing Hair from Field of Operation on the Head. (Zur Vorbereitung bei Gehirnoperationen.) H. F. O. Haberland.
176 Hernia and Neuralgia after Appendicectomy. W. Mintz.
177 Bimanual Examination of the Prostate. H. F. O. Haberland.

April 25, No. 17, pp. 713-752

178 Postoperative Pseudomenstruation. E. Holländer.
179 Intestine Slips into Loop of Silk Formed as Ligature Loosens Up. (Seltene Form von Strangulation einer Darmschlinge.) R. Vogel.

175. **Preparing for an Operation on the Brain.**—Haberland remarks that shaving the hair preliminary to an operation on the brain is depressing to the patient, tedious for the operator, and liable to cut the skin. He has found that the hair comes off totally and easily in three minutes without the least trouble if barium sulphid (*Barium sulfuratum*) is applied to the region. In three minutes the hair can all be scraped off with a little stick. The only drawback is the odor, but this can be disguised. The hair soon grows out again. He mixes the sulphid with water to a thin paste, with or without addition of a little soap, and applies it with a brush or the hand. After the hairs have been scraped off he rinses and dries the region.

Zentralblatt für Gynäkologie, Leipsic

April 18, XXXVIII, No. 16, pp. 585-616

180 Remarkable Twisted Looping of Umbilical Cord of Twins with Single Amnion. S. Dietrich.
181 Systematic Abstention from Ligating the Umbilical Cord in Normal Cases. (Methode der Nichtunterbindung der Nabelschnur. Ausgefuhrt bei 10,000 Geburten.) A. N. Rachmanow.

April 25, No. 17, pp. 617-648

182 *Necrobiotic Endometritis from Abnormal Menstruation. L. F. Driessen.
183 Outcome of Serodiagnosis Varies with Functional State of the Ovaries. (Zur Frage der Beziehungen der Abderhaldenschen Reaktion zur Sekretion des Ovariums.) T. A. Solowjew.
184 *Epinephrin Treatment of Osteomalacia. (Die Methode Bossi bei Osteomalakie.) D. Cavarzani.

182. **Necrobiotic Endometritis.**—Driessen says that he has encountered seventy-five cases of a peculiar endometritis which is liable to bring on profuse hemorrhages. He ascribes it to abnormal menstruation; the casting off of the mucosa does not occur as regularly as under normal conditions and necrotic scraps cling in place. Just as scraps left after abortion are liable to set up hemorrhage, so these scraps of mucosa may entail it, and the findings closely resemble those in the endometritis after abortion. He has encountered it in many cases in which the possibility of a pregnancy was out of the question. The women are usually approaching the menopause and the girls are passing through the stress of puberty. The abnormal features of the menstruation are thus easily understood. Curetting may cure completely, but as the process recurs at each menstruation the effect is only temporary. A permanent cure is generally possible only when the ovarian functioning, the remote cause, is either modified or stops completely. Either ovariectomy or roentgenotherapy may be considered for the purpose. The latter seems especially promising in these cases which deceptively suggest malignant disease, both clinically and under the microscope, by the necrosis, hyaline degeneration, proliferation of epithelium, tendency to cyst production and signs of inflammation.

184. **Epinephrin Treatment of Osteomalacia.**—Cavarzani adds another to the forty-six cases on record in which systematic epinephrin treatment cured osteomalacia. At the same time he cites twenty-six cases that have been reported in which little or no benefit was derived from the treatment. In some of these cases the epinephrin was stopped at the first sign of intolerance, so the treatment had really no chance to display any efficacy. The hypophysis seems to be able to sensitize the adrenals, and hence combining hypophysis extract with the epinephrin treatment might enhance the action of the latter, he suggests. He adds that there is much to sustain the assumption that deficient functioning of the adrenals interferes with the normal growth of the skeleton. His observation of the prevalence of rachitis and osteomalacia in regions with certain types of soil and drinking water has convinced him that a deficiency of lime in the food has something to do with their development.

Gazzetta degli Ospedali e delle Cliniche, Milan

XXXV, Nos. 42-45, pp. 441-472

185 Vaccination against Tuberculosis According to Maragliano's Technic. E. Curti.
186 Diagnostic Local Reaction in Syphilis. (L'intradermoreazione nella sifiilide mediante l'estratto di sifiloma scrotale di coniglio.) M. Trossarello.

Policlinico, Rome

April 12, XXI, No. 15, pp. 521-556

187 *Iodized Benzol as Substitute for Tincture of Iodin for Sterilization of the Skin. (Sopra un nuovo tipo di soluzione jodica per il metodo Grossich.) G. Zanetti.

April 1, Medical Section, No. 4, pp. 145-192

188 Pedunculated Tumor of the Liver. N. Trulli.
189 Urochromogen in the Urine merely Sign of Rapid Destruction of Tissue. (La reazione di Moriz-Weisz.) N. Martelli and D. Pizzetti.

187. **Iodin-Benzol for Sterilization of the Skin**—Zanetti has been testing various substances as vehicle for iodin, to take the place of the tincture which deteriorates so rapidly. He announces that benzol dissolves iodin readily and the solution keeps indefinitely, while the benzol seems to enable the iodin to penetrate deeper into the skin. The saturated benzol solution contains 9.75 per cent. iodin while the tincture represents less than this.

Brazil-Medico, Rio de Janeiro

April 1, XXVIII, No. 13, pp. 123-132

190 Dwarf Growth from Achondroplasia. (A proposito de um caso achondroplasia.) A. Austregesilo and F. Esposel.
191 Aspect of the Normal and Pathologic Bladder. (Notas sobre a cystoscopia.) R. de Buller.

Semana Medica, Buenos Aires

March 19, XXI, No. 12, pp. 637-684

192 Electrocardiography. A. Viton.
193 Primary Sarcoma in Muscle; Three Cases in Children. G Amunategui.
194 Operative Treatment of Hemorrhoids. J. Denegri.
195 Literature Written by the Mentally Unbalanced. (La literatura de los alienados. Su valor clinico y medico-legal. N. A. Rojas.

Hospitalstidende, Copenhagen

April 15, LVII, No. 15, pp. 449-480

196 *Acute Hemorrhagic Pancreatitis. H. Bindslev.

196. **Acute Hemorrhagic Pancreatitis.**—Bindslev states that he encountered three cases of this affection in a recent six months' period, all in women between 52 and 67, and all fatal. All of them had had pain in the upper abdomen at times, ascribed to gall-stones, and gall-stones were found at the operation in every case. The pains were characteristic, not radiating, with pain-free intervals at first, but the pains increasing and becoming continuous in time, often so intense that even morphin did not relieve. Vomiting generally occurs early and often keeps up with surprising regularity. The collapse and violent pains may suggest perforation, but with perforation of the stomach the tenderness in the region is more intense and the board-like hardness of the abdominal wall differs in every respect from the peculiar meteorism with pancreatitis. The temperature usually runs up higher than with ileus. If there are no signs of thrombosis, endocarditis or phlebitis, pancreatitis seems more plausible than embolism when the signs of shock develop gradually, in the course of a day or so, and the temperature rises only gradually. There was a tendency to arteriosclerosis, obesity and cholelithiasis in the three cases reported, plus endocarditis in one case, but the biliary passages were not obstructed in any instance. The abdomen was opened in each case, but the conditions were found already irreparable.

Ugeskrift for Læger, Copenhagen

April 9, LXXVI, No. 15, pp. 635-680

197 Hypophysis Extracts in Obstetrics. (Hypopfyseckstrakten i Födselshjælpen.) K. A. Esbensen.

April 16, No. 16, pp. 681-726

198 Artificial Fecundation. (Tilfælde af Fecundatio artificialis med positivt Resultat.) V. Ryder.

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THE ABDERHALDEN-FAUSER REACTION IN MENTAL DISEASES

WITH SPECIAL REFERENCE TO DEMENTIA PRAECOX *

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After Abderhalden had demonstrated that the animal organism responds to the parenteral introduction of alien proteins by the appearance in the blood of proteolytic ferments which are directed more or less specifically against the proteins in question, the thought naturally suggested itself that similar reaction products might also appear, if proteins derived from the animal's own body were to find their way into the circulation. Theoretically, this seemed not at all unlikely, since practically every cell that is not bathed directly in the blood-stream must, in a manner, be alien to that medium. As a matter of fact, Abderhalden could demonstrate that in pregnancy, during which chorionic cells are known to enter the maternal circulation, corresponding ferments do appear and remain demonstrable as long as pregnancy continues. A basis was thus established on which a multitude of biologic and hence of pathologic questions also became subject to experimental investigation, and among these, of course, the problem of the long-suspected connection between certain mental diseases and the functional activity (namely, derangement) of the sex glands. So thoroughly has this been appreciated that there is probably not a single psychiatric clinic of note where serologic studies of this order are not now in progress. The general interest in this direction has been further accentuated by the enthusiastic reports which have emanated from Fauser's clinic concerning the findings in the dementia praecox group, and it is with this question more especially that we are concerned in the present communication.

In his address before the annual meeting of the German Psychiatric Association, held in Breslau in May, 1913, Fauser[1] reported that he had then examined some 250 patients afflicted with various forms of mental diseases, and that he had found protective ferments directed against sex glands only in dementia praecox; that the serum of male patients reacted only with testicular antigen and the serum of female patients only with ovarian antigen.

As negative reactions alone were obtained in the other purely functional psychoses, such as manic-depressive, hysteric and purely degenerative insanity, etc., he very naturally concluded that the method might become of signal value in differentiating dementia praecox from these other types. In a footnote he adds that ferments of this order were later found also in isolated cases of patients who were at the time not (not yet?) suffering from dementia praecox; but that in these cases there was a demonstrable abnormality of function (dysfunction) on the part of the thyroid gland, and that clinically also these cases could readily be differentiated from the functional psychoses just mentioned.

Besides these findings in dementia praecox, Fauser also ascertained that ferments directed against brain cortex can be demonstrated in the majority of cases, while a reaction to thyroid tissue was only occasionally noted, though, at times, it was observed in the absence of any recognizable enlargement of the gland. In the purely functional psychoses other than dementia praecox, on the other hand, no antiorgan ferments of any kind could be demonstrated.

In contradistinction to these findings were those obtained in certain neuroses and psychoses associated with evident enlargement of the thyroid gland, in which the symptoms of the patient would in a general way have warranted the diagnosis of dementia praecox, and in which both cortex and thyroid were digested, but sex gland was not affected. In paresis also, ferments directed against cortex were almost invariably present, and occasionally ferments against liver and kidney, while those against sex gland could not be found.

Since Fauser's original reports, several other papers have appeared which deal with the same question and which in a general way confirm his findings, although the experience of some investigators has been less encouraging.

Wegener,[2] in a preliminary report covering 200 cases, and in a second communication in which the findings in 600 cases are detailed, confirmed Fauser's observations. In commenting on his hebephrenic cases he distinguishes between simple hebephrenia, hebephrenia associated with katatonia, and hebephrenia in which a definite mental deterioration had already occurred (dementia praecox). In the first group (121 cases) he observed cleavage of sex gland; in the second (12 cases), in addition to this, cleavage of thyroid, which never occurred in the first; and in the third (96 cases) cleavage of sex gland and cortex. Only negative results were obtained in simple "affect"

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[1] Fauser, A.: Pathologisch-serologische Befunde bei Geisteskranken auf Grund der Abderhaldenschen Anschauungen und Methoden, Allg. Ztschr. f. Psychiat., 1913, lxx, 719; Deutsch. med. Wchnschr., Dec. 26, 1912, p. 2446; Feb. 13, 1913, p. 304; München. med. Wchnschr. March 18, 1913, p. 584.

[2] Wegener, E.: *Serodiagnostik nach Abderhalden in der Psychiatrie,* München. med. Wchnschr., 1913, No. 22, p. 1197; Jan. 6, 1914, p. 15.

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psychoses, simple hysteria and in chronic paranoia. In epilepsy (61 cases) a reaction with cortex was obtained immediately after the attack and in cases progressing to dementia also in the interval. In melancholia (25 cases) cleavage of liver was observed, and in some cases also of sex gland, but in the latter event the subsequent course of the malady showed that the melancholia had merely obscured the underlying psychosis, especially a hebephrenia. Cleavage of cortex was noted in chorea (6 cases), multiple sclerosis (8), arteriosclerosis cerebri and senile dementia (12), paresis, lues cerebri and tabes (67), brain and spinal tumors (15), meningitis (10), following narcosis and local anesthesia (8), alcoholic psychoses (8) and paralysis agitans (1). Summarizing his general impressions, Wegener refers to the evident importance of the reaction in the differential diagnosis between otherwise similar cases and to the unfavorable prognosis which those offer in which cortex cleavage can be demonstrated on repeated examination.

Kafka,[3] as the result of a study of 100 cases of mental diseases, concludes that ferments against sex gland are characteristic of dementia praecox, but adds that positive results may be exceptionally obtained also in paresis and during epileptic seizures. The sex-gland reaction, however, was not obtained in all cases of dementia praecox, and in full strength only in 13 out of 30, while 12 were entirely negative. The reaction with thyroid was positive in 20 of 38 cases, and it is interesting to note that the majority of the praecox cases in which the diagnosis was not self-evident on first examination, belonged to this order. A definite cortex reaction was found in 20 out of 32 cases, and one with adrenal tissue in 5 out of 22. Like Fauser, Kafka emphasizes both the diagnostic and the prognostic value of the method in the study of mental diseases.

Mayer[4] reports his findings in 47 cases of mental disease, and concludes from a study of 16 cases that in dementia praecox the serum always contains homologously directed ferments against sex gland, and that it usually also reacts with thyroid and cortex, while no ferments were found in the other functional psychoses. In paresis, on the other hand, he found a reaction with sex gland in 5 out of 8 cases, with cortex in all and with liver in 5.

Further confirmatory reports have been published by Fischer[5] of Stuttgart (24 cases), who found that in 12 dementia praecox cases a reaction occurred "fairly" constantly with cortex and sex gland, and in those which were complicated with thyroid hypertrophy, also with thyroid tissue. In his four cases of manic-depressive insanity, no tissue reactions were obtained, while a response to cortex was noted in all the paretics that were examined (15).

Römer and Bundschuh[6] of Illenau (36 cases) noted a reaction with cortex and testicle in 15 cases of dementia praecox, out of 20; with cortex and thyroid in one, with all three organs in 3 and with thyroid only in 1. Negative reactions were obtained in 6 normal persons and in 4 cases of manic-depressive insanity. In paresis (6 cases) a positive reaction with cortex exclusively was observed in 3, with cortex and thyroid in 1, with cortex and testicle in 1 and with testicle only in 1.

Theobald[7] reports a reaction with sex gland in 53 per cent., with cortex in 63 per cent., and with thyroid in 69 per cent. of the praecox cases. Fuchs and Freund[8] finally report a small series of cases (23) which were examined against sex gland and pancreas. Of the six manic-depressive cases some reacted with sex gland, while one gave a feeble reaction with pancreas. In this instance sugar had been found in the urine on two occasions. Of the 12 dementia praecox cases, 11 reacted with sex gland and all of them with pancreas, while a pancreatic reaction was noted in 5 paretic cases out of 7. Of the three male patients, one gave a full response to testicle, and of two female patients one reacted similarly to cow's ovary.[9]

Beyer[10] reports a positive reaction in six cases of dementia praecox (100 per cent.), and a negative reaction in two cases of manic-depressive insanity (100 per cent.) and one of paresis.

In contradistinction to the investigators above mentioned, Neue,[11] Allers,[12] Willige,[13] Hauptmann and Bumke,[14] and Brahm[15] have arrived at less encouraging results. Allers of Munich, however, seems to have confined his investigations to the behavior of the serum toward brain tissue. He concludes that even with a perfect technic positive reactions are at times obtained in circular insanity and the psychopathies.

Willige of Halle states that in paresis a reaction with brain tissue was observed in the majority of cases, but that in most of these the serum also reacted with thyroid and testicle. So far as the dementia praecox question is concerned, he merely mentions that in "isolated katatonic cases the reaction with brain tissue was negative." Two hypophyseal tumors gave a marked reaction with hypophysis; one also a feeble response to thyroid. One brain tumor reacted with thyroid, but not with brain.

Neue, working in Schröder's clinic (Greifswald), merely admits the more constant occurrence of positive reactions toward sex gland, cortex and thyroid in dementia praecox, as contrasted with degenerative cases, manic-depressive insanity and normal persons (positive reactions with testicle, pancreas and thyroid in seven out of nine young, healthy, male attendants). Of eight cases of paresis, cleavage of cortex was observed in all, but frequently also that of other organs (pancreas, liver and kidney). Seven cases of cerebral arteriosclerosis reacted with cortex and prostate and sometimes also with testicle.

The results of Hauptmann and Bumke (Freiburg) are altogether divergent from those of Fauser. The two former observers thus not only failed to demonstrate the homologous sex-gland specificity of the blood ferments which had been established by Fauser and confirmed by others, but also obtained sex-gland reactions in psychoses other than dementia praecox, in non-mental cases and in "normal" persons. Hauptmann adds, however, that he was able to convince himself in Fauser's laboratory of the validity of Fauser's claims and that specific reactions were there obtained even with tissues that had been prepared in Freiburg.

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[3] Kafka, V.: Ueber den Nachweis von Abwehrfermenten im Blutserum von Geisteskranken, etc., Ztschr. f. d. ges. Neurol. u. Psychiat., 1913, xviii, 341.

[4] Mayer, W.: Die Bedeutung der Abderhaldenschen Serodiagnostik für die Psychiatrie, München. med. Wchnschr., Sept. 16, 1913, p. 2044.

[5] Fischer, J.: Abstr. Ztschr. f. d. ges. Neurol. u. Psychiat., 1913, vii, 559.

[6] Römer und Bundschuh: Abstr. Ztschr. f. d. ges. Neurol. u. Psychiat., 1913, vii, 564.

[7] Theobald, M.: Berl. klin. Wchnschr., Nov. 24, 1913, p. 2180.

[8] Fuchs, A., und Freund, A.: München. med. Wchnschr., Feb. 10, 1914, p. 307.

[9] The testicle from lower animals gave the same results as the organ from man.

[10] Beyer, B.: München. med. Wchnschr., Nov. 4, 1913, p. 2450.

[11] Neue: Abstr., Ztschr. f. d. ges. Neurol. u. Psychiat., 1913, vii, 564.

[12] Allers, cited by Oeller, H., and Stephan, R.: München. med. Wchnschr., Jan. 6, 1914, p. 13.

[13] Willige: München. med. Wchnschr., 1914, p. 565.

[14] Hauptmann and Bumke: München. med. Wchnschr., 1914, p. 566.

[15] Brahm: Abstr. München. med. Wchnschr., July 29, 1913, p. 1689.

Brahm finally reports that cleavage of brain peptone was observed in all of his dementia praecox cases; that a corresponding reaction with silk peptone occurred in 50 per cent. of the cases; that serums from praecox cases frequently reacted with placenta; that in paresis the cleavage of brain antigen is feebler and that positive reactions also may be observed in psychopathic cases.

In surveying the literature just outlined, one cannot help being impressed, on the one hand, by the wonderful apparent uniformity of the results reported by Fauser, and on the other by the total lack of uniformity of those obtained by others, such as Hauptmann and Bumke. The thought naturally suggests itself that two factors may have been operative to this end, namely, that Fauser was carried away by his enthusiasm and allowed himself to be influenced unduly in the direction of his own wishes, and that Hauptmann and Bumke lacked complete control of the technic. As a matter of fact, there is good ground for the belief that both factors were operative. Fauser himself states that he obtained a reaction with sex gland repeatedly in cases in which this "was not expected or at least not certainly expected"; that in the cases in question, either the diagnosis between manic-depressive insanity and dementia praecox could not be made with certainty, or the diagnosis of manic-depressive insanity seemed to be the only diagnosis warrantable. He adds that in just such cases the serologic diagnosis proved superior to the clinical diagnosis, as evidenced by the subsequent course of the malady or the added information brought out by a more searching investigation into the patient's history. Fauser, in other words, admits that he tried to make his clinical diagnosis fit the serologic one in cases in which the two did not tally, rather than leave the question of the occurrence or nonoccurrence of the reaction in the functional psychoses open for the present. This, of course, can be readily understood, if we realize the enthusiasm which his discoveries must have elicited in his own mind; but, on the other hand, it seems that the time interval which elapsed between the serologic examination and the change in diagnosis was scarcely long enough to warrant this change.

Another factor which may properly be advanced against the immediate acceptance of Fauser's published results is his absolute silence regarding questions of technic, and the fact that his results seem to have been as uniform before Abderhalden himself realized the necessity of increasing his demands on the character of the technic, as afterward. As a matter of fact, there is probably not one worker in this difficult field who, even after a long familiarity with the work, has not failures to record in abundance. To be sure, Fauser says in his final response in connection with the discussion relative to his address at the meeting of the German Psychiatric Association in Breslau, that with his earliest tests he obtained results which were truly tragicomic, and remarks that even Abderhalden in his pregnancy work had similar experiences. Granted all this; but even so, one can but wonder at Fauser's uniform results after he had passed beyond the stage of tragicomedy to which he refers.

On the other hand, there can be no doubt that certain workers like Hauptmann and Bumke reported their findings at a time when they certainly did not control the necessary technic. The writers virtually acknowledge this, but it is certainly much to be regretted that workers who fail in their first attempt to confirm the findings of another, should rush into print, apparently prompted by the sole desire to contradict the findings of probably equally honest workers.

Whatever the reason, the results obtained by different observers, though they support the claims of Fauser in the main, are still sufficiently divergent to warrant the report of another series of observations such as our own. The material for these examinations was obtained from the Sheppard and Enoch Pratt Hospital, and comprises 106 cases. The serums were tested against sex gland, Basedow thyroid and cortex. The results will be seen in the accompanying table.

TABLE OF RESULTS IN 106 CASES TESTED AGAINST SEX GLAND, BASEDOW THYROID AND CORTEX

	No. of Cases	Sex Gland	Per Cent.	Basedow Thyroid	Per Cent.	Cortex	Per Cent.
Dementia praecox	25	22‡	88	13	56	10	40
General paresis	11	0	0	4	36	5	45
Manic-depressive insanity	25	4	16	9*	36	6	24
Involutional depression	10	2	20	5	50	4	40
Constitutional psychopathic states	4	2	50	4	100	4	100
Defective mental development	3	0	0	0	0	2	66
Toxic (nephritis) cases	2	2	100	0	0	1	50
Intoxication psychosis (alcohol)	5	4	80	1	20	1	20
Traumatic psychosis	1	0	0	1	100	0	0
Organic dementia	3	0	0	0	0	2	66
Exhaustion psychosis	1	0	0	0	0	0	0
Drug intoxication (morphin)	1	0	0	0	0	0	0
Doubtful diagnosis	15	10†	66	2	11	4	26

* All of these patients were agitated, showing "Angst" symptoms.

† All of these patients showed constitutional psychopathic tendencies.

‡ In three patients classed as having dementia praecox and who did not react, the disease was of several years' duration.

To summarize, we can say that a sex-gland reaction may be obtained in nearly, if not all, cases of dementia praecox at some stage of the disease, but that the reaction is not specific of dementia praecox, as Fauser would have us believe. It may, of course, be debatable whether the relatively small percentage of cases in which the clinical history pointed to manic-depressive insanity, but in which a reaction was obtained nevertheless, were in reality manic-depressive cases, but the fact remains that in other types of insanity the reaction may also be obtained, even though we admit that it is observed far less constantly. Of special interest is our observation that in a large percentage of alcoholic cases a sex-gland reaction seems to be obtainable. It will be noted that no reaction was obtained in any one of the eleven cases of paresis. Our results thus seem quite in accord with those of Fauser, but just as he notes that at one time one of his associates obtained a positive reaction in an isolated case of paresis, so also did Dr. Judd in another series of mental cases note a positive reaction in a few instances. The significance of these divergent findings may of course be manifold.

In this connection I would recall the observations of Lampé and his co-workers, Papazolu and Fuchs, who report that in Basedow cases a sex-gland reaction may be frequently observed. It might, of course, be argued that as no clinical histories are given in full, some of these may have been dementia-praecox cases, but as the report has emanated from the first medical clinic of Munich, it hardly seems likely that all the positive cases were of that order. Such apparently divergent findings, however, in no way diminish the basic importance of Fauser's original observations from the standpoint either of diagnosis or of general biology and experimental medicine. The fact remains that in dementia praecox a positive reaction is the rule, and that in the purely functional psychoses it is the exception. Its possible occurrence in paresis and alcoholic insanity scarcely diminishes the importance of the reaction from this point of view.

How to explain our positive findings in manic-depressive cases I do not know. It is possible that some of these cases were really praecox cases, but it is not likely that this explanation would be applicable to all our exceptions to the general rule of Fauser that in manic-depressive insanity only negative reactions are obtained. We must, hence, either conclude that Fauser's rule does have exceptions, or that our positive findings were due to some error of technic. Before admitting or denying this possibility, it may not be out of place to enter in some detail on the general question of technic.

TECHNIC

As I have previously indicated, Fauser does not discuss the question of technic at all, but merely states that he followed the rules of Abderhalden implicitly and that his results, before Abderhalden "reenforced" those originally laid down, were practically the same as afterward. These rules have reference essentially to the condition of the serum, to that of the parchment thimbles, and of the tissues which are used as antigens.

Concerning the first factor, he asserts that the serum must be free from hemoglobin or corpuscles and uncontaminated by bacteria. These demands were complied with in every particular. The blood was collected in large vacuum tubes similar to the smaller Keidel tube, which permit of thorough dry sterilization, and can be handled with equal facility. The blood was placed in the ice-box over night, the serum separated by centrifugation the next morning and recentrifuged twice more before being used. No serum was used that was tinged reddish in the slightest degree. The dialyzers which were available at first were those originally advocated by Abderhalden, namely, No. 579 Schleicher and Schüll. As a large percentage of these were found to be too pervious, the firm placed a tighter thimble on the market, bearing the number 579a. The first lot of a hundred of these were found so tight, however, that using only 0.5 c.c. of serum in each, no reactions could be obtained with sex gland unless the incubation was extended to from sixty to sixty-six hours. Subsequently, a lot of supposedly tested thimbles were secured from Schoep of Halle, but these also were found to be rather tight, necessitating incubation for sixty hours with 0.5 c.c. of serum. Quite a number of these, moreover, had to be discarded, as they were permeable to serum, in spite of their having been sent out as "tested."

All the thimbles were, of course, tested with serum alone, and those discarded which allowed reacting substances to pass through. If the dialysate gave no reaction with ninhydrin, they received a single notch in the margin, and were then tested against serum in combination with a tissue which was known to react readily, such as a very cellular carcinoma, which gave reactions with practically every serum whether derived from a normal person or a patient; while when placed in the dialyzer by itself, the dialysate gave no reaction whatever with ninhydrin. Or, the thimbles were tested with an "unimportant" organ in a series of experiments, and those selected which gave reactions in the dialysate. Either procedure gives the same results as when tested with peptone alone. After having been shown to be permeable for substances resulting from the interaction of serum and tissue, the thimbles received two additional notches and were then set aside in jars under toluene until needed for an actual experiment. Early in our work we sterilized our dialyzing jars with the dialyzer and the necessary amount of water, in the steam sterilizer, before using them, but abandoned this when it was found that the permeability of the thimbles was thereby lessened.

After being used the thimbles were carefully washed under the tap, placed in jars under running water for several hours and then stored under water and toluene until needed. The average life of a thimble under such conditions, being in use for from three to four days of every week, certainly extends over several months.

I have pointed out above that in most of our experiments we used but 0.5 c.c. of serum to each thimble. We may be criticized on this point, particularly as Abderhalden discountenanced the use of such small quantities in his pregnancy test. We found, however, that the use of such small quantities of serum is perfectly admissible if the period of incubation is lengthened, as we have done, and if the quantity of water on the outside of the dialyzer is reduced to 10 c.c., of which 5 c.c. are then used in the final test with 0.1 c.c. of the ninhydrin solution. The very fact that with this technic results could be obtained which in the main go to support the claims of Fauser, is the best argument in favor of its admissibility.

We were led to the use of these small quantities of serum in our attempt to obviate the appearance of non-specific reactions with which every worker in this field is no doubt familiar, no matter whether he is willing to admit this in cold print or not. We have found it helpful, though by no means a certain guard against such reactions.

As regards the preparation of the tissues, I may say that every attempt was made to remove all traces of blood, and in many instances this was controlled by applying the phenolphthalin test for occult blood to the wash-water, and carrying the washing to the point of a negative reaction, even when the test was applied to the small amount of water that could be expressed from the tissues. The tissue, after being stripped of fat, connective tissue and macroscopically visible blood-vessels, was passed through a meat-hashing machine and then washed in running water for from twenty-four to forty-eight hours, after which it was coagulated by being placed in boiling water containing one drop of glacial acetic acid to the liter, as suggested by Abderhalden. The subsequent extraction with boiling water was then carried on in exact conformity with Abderhalden's method. As a matter of fact, the tissues to be used on a given day were boiled out at least half a dozen times on the day preceding, and then again as many times on the working-day, and to the point at which not the slightest reaction could be detected even on standing for half an hour in artificial light, which always accentuates the reactions. It will thus be noted that every precaution was taken to guard against sources of avoidable error, to which end the use of the small quantities of serum with the prolonged incubation certainly would tend to increase the number of negative instead of positive reactions.

The serums were always examined in sets of ten, without the slightest knowledge on our part of the clinical diagnosis, which was furnished only after our results had been announced.

With these precautions given I hardly think that our work is open to criticism from the standpoint of technic, so far at least as our present demands on the technic go, but neither am I ready to admit that a true sex-gland reaction may be obtained in the functional psychoses outside of dementia praecox. Before this question can be definitely answered, our technic must be radically improved. I feel very strongly that the underlying principle is correct, that we are dealing with a reaction which is in a certain sense specific even now with the imperfect technic at our command, but which is readily marred by apparently non-specific collateral or simultaneous reactions. Were this not true then one should obtain only definitely positive or definitely negative results; but as a matter of fact, in our experience at least, a correct "laboratory diagnosis" was frequently possible only when the ultimate results were compared with one another. If, for example, the dialysates were tested after an incubation of only twenty-four hours, using testicular tissue in combination with male serums, negative reactions only were observed, and our inference, had the examination ceased at this point, would have been that none of the serums had been taken from praecox patients. After an incubation of another twenty-four hours one or two specimens would show a reaction perhaps, but of so feeble a degree that one would hardly venture to attach any significance to the reaction. After twelve hours further not only the two specimens just noted would give a reaction, but perhaps six or seven out of the ten cases. The reaction, however, would then be of varying intensity, the most intense color being obtained with the two specimens which showed a faint reaction after forty-eight hours. A third one would perhaps be quite marked, though less so, while the remainder would give a faint color only. If at this stage we were to interpret the two intense reactions only as positive reactions, a comparison with the clinical condition of the patient would reveal that these had been the only praecox cases of the series. On waiting still longer we would at times find that the entire series was blue, and had our examination been made at this time only, we should have been led into the error of announcing that from a laboratory point of view all ten were praecox cases.

The readiness with which a whole series or a part of a series will become positive as incubation is continued, is variable and more marked with some tissues than with others. On the whole, the most satisfactory and unequivocal results were obtained with testicular tissue, cortex and occasionally with Basedow thyroid, while there was very apt to be an appalling blueness of the specimens when ovarian tissue was used, unless indeed the period of incubation was shortened by about twenty-four hours. Such variations Abderhalden would no doubt explain on the assumption that our tissues were not sufficiently free from blood, and this explanation seems to have been the accepted one in the case of many of the results that have been contrary to expectations, but although some of the abnormal findings may have been due to this cause, there must be still other factors which are operative in this direction.

This is strongly suggested by various incidental observations. Thus on one occasion we found that whereas practically all of twelve serums taken from divers mental cases gave positive reactions with ovarian tissue, but one of the same series reacted with blood-clot by itself. Had the latter parallel tests not been made the results with ovarian tissue would have been open to criticism on the supposititious basis that the tissues had not been washed free from blood, since errors due to faulty dialyzers or to imperfect extraction could be excluded. Such an assumption, however, is invalidated by the results which were obtained when the same serums were directly combined with blood clot. In this connection a number of observations which were made when animal tissue was substituted for human tissue acquire a certain significance as likewise suggesting the operation of extraneous factors.

Fuchs and Freund announced not long ago that they found beef testicle and beef ovary as efficacious as the corresponding human organs. We had already made the observation that rabbit testicle also may give apparently specific reactions, and in a series of ten cases could verify Fuchs and Freund's observations in reference to beef testicle, also, providing that the period of incubation was interrupted at a certain time. If this is exceeded, non-specific reactions appear, and, as in the case of the human organs, we found that these are more apt to occur early when ovarian tissue was used than in the case of testicular tissue. Such reactions can hardly be explained except on the assumption that aside from possible specific factors non-specific influences also are at work, and until these factors are known but little real headway in the application of this interesting field of investigation to clinical medicine will be possible. It would accordingly seem highly desirable if a number of the large army of workers in this field were to abandon the paths which have hitherto been pursued, and to devote their attention to a study of the fundamental physiologic principles which are involved. When once this basis has been furnished the day will not be far distant when "organ diagnosis" will become a possibility. It is my firm conviction that such a day is actually before us and hence that Abderhalden's basic work in this field should be viewed as one of the most important contributions to modern experimental medicine.

With our present knowledge it is of course impossible to draw any far-reaching conclusions concerning the significance of the sex-gland reaction in dementia praecox. Certain possibilities, however, suggest themselves which it may be well to discuss in brief.

When Abderhalden first discovered that during pregnancy a proteolytic ferment which is specifically directed against placental tissue, appears in the blood, he believed that this was the outcome of an invasion of the circulation by chorionic cells, which naturally would be alien to the blood. As a matter of fact it can easily be shown in the animal experiment that such ferments do appear when placental tissue is introduced into the organism by parenteral channels, and it is noteworthy that this will occur not only in female animals, but also in males. This, however, will also take place if instead of the tissue itself a corresponding extract (*Presssaft*) is used. So that we may conclude that the introduction of either cells or cell-products, so far as they are normally foreign to the blood, will divergent findings, however, in no way diminish the basic importance of Fauser's original observations from the standpoint either of diagnosis or of general biology and experimental medicine. The fact remains that in dementia praecox a positive reaction is the rule, and that in the purely functional psychoses it is the exception. Its possible occurrence in paresis and alcoholic insanity scarcely diminishes the importance of the reaction from this point of view.

How to explain our positive findings in manic-depressive cases I do not know. It is possible that some of these cases were really praecox cases, but it is not likely that this explanation would be applicable to all our exceptions to the general rule of Fauser that in manic-depressive insanity only negative reactions are obtained. We must, hence, either conclude that Fauser's rule does have exceptions, or that our positive findings were due to some error of technic. Before admitting or denying this possibility, it may not be out of place to enter in some detail on the general question of technic.

TECHNIC

As I have previously indicated, Fauser does not discuss the question of technic at all, but merely states that he followed the rules of Abderhalden implicitly and that his results, before Abderhalden "reenforced" those originally laid down, were practically the same as afterward. These rules have reference essentially to the condition of the serum, to that of the parchment thimbles, and of the tissues which are used as antigens.

Concerning the first factor, he asserts that the serum must be free from hemoglobin or corpuscles and uncontaminated by bacteria. These demands were complied with in every particular. The blood was collected in large vacuum tubes similar to the smaller Keidel tube, which permit of thorough dry sterilization, and can be handled with equal facility. The blood was placed in the ice-box over night, the serum separated by centrifugation the next morning and recentrifuged twice more before being used. No serum was used that was tinged reddish in the slightest degree. The dialyzers which were available at first were those originally advocated by Abderhalden, namely, No. 579 Schleicher and Schüll. As a large percentage of these were found to be too pervious, the firm placed a tighter thimble on the market, bearing the number 579a. The first lot of a hundred of these were found so tight, however, that using only 0.5 c.c. of serum in each, no reactions could be obtained with sex gland unless the incubation was extended to from sixty to sixty-six hours. Subsequently, a lot of supposedly tested thimbles were secured from Schoep of Halle, but these also were found to be rather tight, necessitating incubation for sixty hours with 0.5 c.c. of serum. Quite a number of these, moreover, had to be discarded, as they were permeable to serum, in spite of their having been sent out as "tested."

All the thimbles were, of course, tested with serum alone, and those discarded which allowed reacting substances to pass through. If the dialysate gave no reaction with ninhydrin, they received a single notch in the margin, and were then tested against serum in combination with a tissue which was known to react readily, such as a very cellular carcinoma, which gave reactions with practically every serum whether derived from a normal person or a patient; while when placed in the dialyzer by itself, the dialysate gave no reaction whatever with ninhydrin. Or, the thimbles were tested with an "unimportant" organ in a series of experiments, and those selected which gave reactions in the dialysate. Either procedure gives the same results as when tested with peptone alone. After having been shown to be permeable for substances resulting from the interaction of serum and tissue, the thimbles received two additional notches and were then set aside in jars under toluene until needed for an actual experiment. Early in our work we sterilized our dialyzing jars with the dialyzer and the necessary amount of water, in the steam sterilizer, before using them, but abandoned this when it was found that the permeability of the thimbles was thereby lessened.

After being used the thimbles were carefully washed under the tap, placed in jars under running water for several hours and then stored under water and toluene until needed. The average life of a thimble under such conditions, being in use for from three to four days of every week, certainly extends over several months.

I have pointed out above that in most of our experiments we used but 0.5 c.c. of serum to each thimble. We may be criticized on this point, particularly as Abderhalden discountenanced the use of such small quantities in his pregnancy test. We found, however, that the use of such small quantities of serum is perfectly admissible if the period of incubation is lengthened, as we have done, and if the quantity of water on the outside of the dialyzer is reduced to 10 c.c., of which 5 c.c. are then used in the final test with 0.1 c.c. of the ninhydrin solution. The very fact that with this technic results could be obtained which in the main go to support the claims of Fauser, is the best argument in favor of its admissibility.

We were led to the use of these small quantities of serum in our attempt to obviate the appearance of non-specific reactions with which every worker in this field is no doubt familiar, no matter whether he is willing to admit this in cold print or not. We have found it helpful, though by no means a certain guard against such reactions.

As regards the preparation of the tissues, I may say that every attempt was made to remove all traces of blood, and in many instances this was controlled by applying the phenolphthalin test for occult blood to the wash-water, and carrying the washing to the point of a negative reaction, even when the test was applied to the small amount of water that could be expressed from the tissues. The tissue, after being stripped of fat, connective tissue and macroscopically visible blood-vessels, was passed through a meat-hashing machine and then washed in running water for from twenty-four to forty-eight hours, after which it was coagulated by being placed in boiling water containing one drop of glacial acetic acid to the liter, as suggested by Abderhalden. The subsequent extraction with boiling water was then carried on in exact conformity with Abderhalden's method. As a matter of fact, the tissues to be used on a given day were boiled out at least half a dozen times on the day preceding, and then again as many times on the working-day, and to the point at which not the slightest reaction could be detected even on standing for half an hour in artificial light, which always accentuates the reactions. It will thus be noted that every precaution was taken to guard against sources of avoidable error, to which end the use of the small quantities of serum with the prolonged incubation certainly would tend to increase the number of negative instead of positive reactions.

The serums were always examined in sets of ten, without the slightest knowledge on our part of the clinical diagnosis, which was furnished only after our results had been announced.

With these precautions given I hardly think that our work is open to criticism from the standpoint of technic, so far at least as our present demands on the technic go, but neither am I ready to admit that a true sex-gland reaction may be obtained in the functional psychoses outside of dementia praecox. Before this question can be definitely answered, our technic must be radically improved. I feel very strongly that the underlying principle is correct, that we are dealing with a reaction which is in a certain sense specific even now with the imperfect technic at our command, but which is readily marred by apparently non-specific collateral or simultaneous reactions. Were this not true then one should obtain only definitely positive or definitely negative results; but as a matter of fact, in our experience at least, a correct "laboratory diagnosis" was frequently possible only when the ultimate results were compared with one another. If, for example, the dialysates were tested after an incubation of only twenty-four hours, using testicular tissue in combination with male serums, negative reactions only were observed, and our inference, had the examination ceased at this point, would have been that none of the serums had been taken from praecox patients. After an incubation of another twenty-four hours one or two specimens would show a reaction perhaps, but of so feeble a degree that one would hardly venture to attach any significance to the reaction. After twelve hours further not only the two specimens just noted would give a reaction, but perhaps six or seven out of the ten cases. The reaction, however, would then be of varying intensity, the most intense color being obtained with the two specimens which showed a faint reaction after forty-eight hours. A third one would perhaps be quite marked, though less so, while the remainder would give a faint color only. If at this stage we were to interpret the two intense reactions only as positive reactions, a comparison with the clinical condition of the patient would reveal that these had been the only praecox cases of the series. On waiting still longer we would at times find that the entire series was blue, and had our examination been made at this time only, we should have been led into the error of announcing that from a laboratory point of view all ten were praecox cases.

The readiness with which a whole series or a part of a series will become positive as incubation is continued, is variable and more marked with some tissues than with others. On the whole, the most satisfactory and unequivocal results were obtained with testicular tissue, cortex and occasionally with Basedow thyroid, while there was very apt to be an appalling blueness of the specimens when ovarian tissue was used, unless indeed the period of incubation was shortened by about twenty-four hours. Such variations Abderhalden would no doubt explain on the assumption that our tissues were not sufficiently free from blood, and this explanation seems to have been the accepted one in the case of many of the results that have been contrary to expectations, but although some of the abnormal findings may have been due to this cause, there must be still other factors which are operative in this direction.

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When Abderhalden first discovered that during pregnancy a proteolytic ferment which is specifically directed against placental tissue, appears in the blood, he believed that this was the outcome of an invasion of the circulation by chorionic cells, which naturally would be alien to the blood. As a matter of fact it can easily be shown in the animal experiment that such ferments do appear when placental tissue is introduced into the organism by parenteral channels, and it is noteworthy that this will occur not only in female animals, but also in males. This, however, will also take place if instead of the tissue itself a corresponding extract (*Presssaft*) is used. So that we may conclude that the introduction of either cells or cell-products, so far as they are normally foreign to the blood, will cause the appearance of corresponding ferments. As chorionic cells and hence [illegible] however, are not found in the normal organism except at certain periods which may be separated from one another by long intervals, whereas the sex glands and their cells are after all constant constituents of the animal body, it would seem *a priori* unlikely that in dementia praecox the appearance of the corresponding ferments should be referable to the action of either *normal* cells or *normal* cell constituents.

In this connection certain observations of Lampé and his co-workers are of interest. These investigators found that in Basedow's disease a more constant and more intense reaction is obtained with Basedow thyroid than with normal thyroid, and they accordingly conclude that in the disease in question we are not dealing with a hyperfunction, but with a perverted function of the gland. Otherwise it would be difficult to understand why the animal body should react with the appearance of a specific ferment to a mere increase of a normal secretion. We should indeed be forced to the conclusion that the reaction must be in response to the appearance in the circulation of the cells themselves; but we should also have to conclude that the chemical structure of these cells must be different from the normal, as otherwise the serum of patients with Basedow's disease should react just as well with normal thyroid as with Basedow thyroid. This possibility of course exists. But we might then ask ourselves if an abnormally constructed cell would not also be likely to furnish an abnormal secretion, in which case the reaction might after all be referable to certain constituents of this altered secretion rather than to the appearance in the circulation of the cells themselves. However this may be, it is evident that either an abnormally constructed cell or abnormally constituted cell-products may theoretically produce the same result.

In considering this question in connection with dementia praecox the thought of course suggests itself that here also we may be dealing with a perverted function of those cells which are concerned in the production of the internal secretion of the sex glands. Evidently, it would be advisable to study, on the one hand, the intensity of the ferment reaction against normal sex gland, and on the other, the reaction against sex gland derived from praecox cases. This has not as yet been done, but would seem to be the most important next step. Practically all the reactions which we obtained with testicular tissue were relatively slight, and it would accordingly go far toward establishing the existence of a perverted function of the cells furnishing an internal secretion, if it could be established that more marked reactions were obtainable with praecox than with normal organs.

That the interstitial cells of the testicles are concerned in the reaction we could demonstrate by combining the patient's serum, on the one hand with infantile tissue, and on the other with adult testicle, when reactions of equal intensity were obtained with the two antigens.

Supposing that the stimulus for the production of the ferments in question were to emanate from the sex glands, the next problem would be to ascertain the origin of the ferments. During his early studies of the pregnancy reaction Abderhalden believed that the ferment originated from the blood-cells, having the leukocytes more particularly in mind. Subsequently, however, he seems to have abandoned this view, and in a late publication he expresses the belief that the ferments might possibly be formed in the very organs against which their activity is directed. One reason which led to this change of view was the observation that whereas antitesticular ferments appear in the blood-serum of normal rabbits following the parenteral introduction of testicular cells, this does not occur in castrated animals. On the other hand, however, it must be remembered that the formation of antichorionic ferments may be evoked artificially both in male and female animals, so that we may conclude that whereas certain ferments may originate in the homologous organs, others may be produced by heterologous cells. This would be in perfect accord with what is known to occur in the production of tetanus antitoxin as a consequence of the introduction of the corresponding toxin.

Even though immunization with normal sex-gland tissue should evoke the liberation of corresponding ferments in the normal organ, it would not follow that other tissues might not become similarly active if an abnormal secretion were to enter the circulation.

Every cell of course contains proteolytic ferments which are capable of causing the digestion of homologous cells, when certain inhibitory factors fall away (for example, autolysis after death), and it would seem the simplest to assume that these ferments are given off by the cell when corresponding cells or cell-products are introduced into the circulation. But it remains to be seen whether the ferments then occurring in the blood are identical with the normal ferments of the normal cells and those occurring in the blood under manifestly pathologic conditions.

Considering the problem from the clinical side, the all-important question of course suggests itself whether or not the reaction has any relation to the pathogenesis of dementia praecox. Theoretically, this is of course perfectly possible. Granted that antisex-gland ferments do occur in the circulation in dementia praecox, and that their presence were the outcome of the appearance in the circulation of an abnormal secretion or of abnormal cells, then we may also assume that digestion of these cells or cell-products will take place, and that all conditions would thus be given for a chronic protein intoxication which might very well expend itself on the central nervous system. Should this be true, then we might also expect that the administration of sex gland to such patients would cause an aggravation of the patient's condition, while partial or entire castration, possibly combined with the transplantation of normal organs might similarly be expected to have a beneficial influence. Evidently, the problem is now open to investigation from many sides, and it does not seem unreasonable to expect that definite advances will be achieved in the near future.

In conclusion, I wish to express my appreciation of the courtesy and cooperation of the staff of the Sheppard and Enoch Pratt Hospital, which made the work outlined above possible.

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Public Hygiene Depends on the Individual.—Power to regulate water-supply and sewage-disposal or to vacate or destroy property unfit for habitation helps materially in improving the sanitation of the home, but it fails to reach that class of people whose personal habits render any home unfit for occupancy.—J. H. Landis, in *Am. Jour. Pub. Health.*

RESULTS OF RADIUM IN CANCER

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The application of radium to the treatment of cancer cannot be considered new. It was first tried nine years ago; and since that time Wickham has been constantly engaged in its application to disease, and especially to cancer, in the very city which may be termed the home of radium.

The Laboratoire biologique du radium was organized in the early part of 1906. The object of this institute was to serve as a center for radium therapy. It possessed a chemical, a physiologic and a physical department, the last furnished with the most sensitive instruments of the Curies' laboratory. These departments, respectively, were under the charge of a competently trained chemist, physiologist and physicist. The therapeutic portion of the work was under the direction of Dr. Wickham. Since 1906, one thousand patients, afflicted with various forms of cancer, have been treated. The results of this treatment have been published in two books, one of which appeared in 1910 and the other in 1913. In the second publication, Dr. Wickham furnishes the following summary of his opinion regarding the action of radium on cancer:

1. Radium causes an undeniably destructive modification of the malignant cells.
2. Malignant tissues display a special and very selective susceptibility to the influence of radium.
3. This destructive action extends to a depth varying up to 9 cm., according to the dosage used and the sensitiveness of the neoplasm.
4. This action, even to the depth mentioned, occurs with the maintenance of the relative integrity of the normal tissues traversed.
5. The action, nevertheless, is not complete enough to warrant the use of radium as a primary therapeutic agent in any form of operable cancer, with the single exception of cancer of the skin.

Cancer of the skin, because of its superficial character and relative benignity, will always constitute a form of cancer belonging to an entirely different category from all other varieties. It forms the first of the groups into which Wickham divides the disease for the consideration of radium therapy. Regarding this group, he says:

> As far as our experience goes, in judging from our statistics, which contain several hundred cases of different varieties, we have arrived at the conclusion that in a majority of epitheliomata of the skin, even in the gravest cases, radium is undoubtedly superior to any other therapeutic agent, both on account of its direct curative action and because of the simplicity of its application.

In some particularly grave cases radium has been most effective in his hands. Even advanced, entirely inoperable forms, characterized by deep extension and in some instances by the presence of large tumors, have scarcely altered his statistics for the worse. In compiling these statistics, the element of time has been carefully considered.

Though it is only in this first group that radium deserves an important place in the fight against cancer, it is nevertheless by no means devoid of usefulness in other forms of the disease. An acquaintance with what has been accomplished in these other varieties is therefore important, for even though the results of radium treatment do not demonstrate its curability in the more advanced cancers, yet they furnish information concerning the extent to which it is able to produce the same selective destructive action on cancer tissue in general.

These other types of cancer, in which are grouped all the more serious and more important varieties, may be considered, from the point of view of radium therapy, under the two main divisions of operable and inoperable cancer.

Considering first the operable group (those cases capable of complete extirpation), Wickham makes the following significant statement:

> Operable cancer should be operated on immediately without delay. This is an absolutely fixed rule.

The inoperable forms are discussed under the different subdivisions of the histologic varieties of cancer and of cancer in the various locations within the body. In nearly all of the inoperable forms it is permissible to use radium, because of the relief from many of the objective and subjective symptoms which it not infrequently affords.

Wickham states that the various sorts of sarcoma yield to radiation more quickly than any of the many types of epithelial cancer. Lymphadenoma and mycosis fungoides are more susceptible than even sarcoma. He is able to report very important palliative results in the treatment of cancer from all regions of the body, and has witnessed an entire retrogression of many large inoperable epitheliomas of the skin and of some breast tumors. Types of the cases similar to those of Wickham have been described also by Dominici (who shares largely in the credit for the work of the institution), together with many photographs, in a monograph entitled, "The Technique and Results of Radium Therapy in Malignant Diseases."

Isolated instances do exist of apparent cures in some of the inoperable forms of cancer of the second group, and there is a fairly large proportion of cases in which the retrogression at the primary site of the tumor has prolonged the life of the patient and rendered him more comfortable. In no instance, however, has there been a complete eradication of the ultimate ramifications of the disease.

The only conclusion to be drawn from these results is that while the influence of radium on all types of cancer is a favorable one, it does not extend to the limits of the disease in any but the most superficial varieties.

The work of the Radium Institute of London, while much more recent, is second to none in importance. The institute possesses 4 gm. of radium — an amount far exceeding the quantity owned by any other single institution.

In the institute's report[1] of 467 cases of cancer treated during 1912, no patient has been classified as cured, inasmuch as it is not permissible to consider cancer in this light until there has been a freedom from recurrence for a period of at least three years. The most favorable results are reported as only apparent cures, though certain of them may later prove to be actual ones.

Of 101 patients with the slow-growing, benign forms of cancer of the skin, 31 were apparently cured,

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[1] Pinch, A. E. Hayward: Brit. Med. Jour., 1913.

41 improved, and 12 did not improve. In cancer of *the rest of the body, including practically all varieties,* there were only 15 cases apparently cured, 156 improved, and 45 did not improve. Of the 15 cases apparently cured, 4 were skin cancers occurring on the hand and cheek, 3 were cancers of the uterus, 2 were breast-cancers, 1 was a cancer of the thyroid gland, 1 was a cancer of the rectum, 1 was a tumor of the parotid gland, and 2 were sarcomas. Among all these cases the cancers of the uterus, breast and rectum are most significant. Cases 180, 5109 and 5199 have been selected as the cancers of the uterus which were apparently cured. In all three of these patients the cancer had returned after operation. Following radium treatment, there was, in each instance, an entire disappearance of the tumor mass and of all induration. It is supposed that Case 35 was the case of cured cancer of the rectum. It was an inoperable cancer, and after an interval of eight months from the time of its treatment with radium, no sign of the growth could be detected. The improvement in Cases 48 and 186 was so great that only the most conservative judgment could exclude them from the category of the apparently cured. Of the tumors of the breast, one was a case of Paget's disease, and therefore superficial. Case 5100 has been selected as the apparently cured case of cancer of the breast, in which the patient concerned had a recurrent cancer. At the beginning of the treatment she had six nodules the size of a walnut which had recurred in the scar. It is interesting to note that the recurrence in this patient had been unsuccessfully treated with the Roentgen ray before the application of radium.

The foregoing results fully confirm the conclusions of Wickham. With the lapse of time they may prove to be even more significant. At present they in no way *alter his deductions and lend no support to the view* that radium can be considered a cure for cancer. They convincingly demonstrate that its specific effect on the disease is not limited to any one of its forms.

In Vienna an important work with radium has been established. In June, 1912, the Vienna Radium Institute began its researches with half a gram of radium, an additional gram being furnished in June, 1913. The total amount, 1.5 gm., is very large, and quite sufficient to test the efficacy of radium on cancer. The institute has been founded as a central station for the distribution of radio-activity to the various departments of the Vienna Hospital. Riehl[2] has reported the results obtained by the use of radium on superficial cutaneous cancer, Wertheim,[3] on its application to cancer of the uterus and Ranzi, Schüller and Sparmann,[4] the results of the treatment of cancer of the various organs. Riehl has treated 114 patients afflicted with skin cancer, and his observations regarding its favorable influence on this form of the disease agree with the conclusions of others. He considers that in this form of cancer the application of radium, even in small quantities, is preferable to other methods of treatment. One of his patients may be referred to as an illustration: A tumor the size of a child's head had retrogressed, except for the deeper extension of the growth, which ultimately had reached the esophagus and caused the death of the patient. Wertheim states that he has treated nine cases of inoperable cancer of the uterus, in a number of which the previously fixed *tumor again became movable;* there was also a considerable reduction in the size of the growth, and altogether the patients improved to such an extent that it was possible to consider radical removal. Notwithstanding all this, it is impossible for him to view even such improvement as at all approaching a cure.

Ranzi, Schüller and Sparmann have treated 53 patients: 6 after operation, for the purpose of preventing recurrence, and 47 with inoperable tumors existing at the time that treatment with radium was instituted. Three of the 6 patients treated palliatively showed an extensive recurrence after a short time. The other 3 gave no evidence of recurrence after a period of three months in 2 of the patients, and two months in the case of the third.

The accompanying table shows the locations and varieties of all the cancers treated.

LOCATIONS AND VARIETIES OF CANCERS TREATED BY RANZI, SCHUELLER AND SPARMANN

	Patients
Sarcoma of the cranium	4
Cancer of the upper jaw	3
Cancer of the neck	6
Cancer of the breast	4
Cancer of the skin	4
Cancer of the penis	1
Melanosarcoma of the skin	1
Cancer of the esophagus	5
Cancer of the stomach	2
Cancer of the rectum	3
Cancer of the interior of the mouth	8
Cancer of the tongue	9
Cancer of the thyroid gland	1
Cancer of the pleura	1
Cancer of the nasopharyngeal cavity	1
	53

Notwithstanding the fact that a series of these cases received a high dosage of radio-activity, in only three instances of the whole fifty-three was there a continuous retrogression of the tumor. One of these three patients had a recurrent cancer of the tongue, about ½ to ¾ inch in diameter; another had a superficial epithelioma of the nose of the benign type, and in this case, while the growth on the nose was healing, a secondary extension of the disease on the upper jaw increased in size; the third patient in this group was a woman with a carcinoma of the tongue, which completely disappeared.

After deducting from the 53 patients 19 who either discontinued treatment or were lost sight of, there remained 34 from whom it was possible to draw conclusions. Of these, 6 died during the course of the treatment; 11 were essentially improved; 6 were very slightly improved, and 3 were made worse. Wertheim concludes with the statement that radium can be considered only a contributory agent in dealing with cancer. It produces solely a limited effect, and therefore its use in operable cancer is equivalent to the denial of principles in dealing with the malignant disease which are already too well founded to permit of question.

The Samaritan Hospital in Heidelberg has also made a report on the action of radium on cancer. This report deserves mention because of the foundation in this hospital of a work devoted exclusively to the cure of cancer, but the value of the work is much less than that of the three institutes already referred to because of the fact that only 20 mg. of radium were available. The report was published by Caan,[5] the details of 130 cases being given, of which 105 had carcinoma and 11 sarcoma. Fifty per cent. of all the cases treated showed the effects of a favorable influence attributable to cancer. Of 38 cancers of the breast a definite improvement was observed in 27 instances. In 8 of the 27 patients a complete retrogression of superficial tumors was noted (in one instance the size of a hen's egg); in 3 of this group of 27 patients the objective improvement was so marked that a previously inoperable growth became shrunken and movable to the extent of permitting consideration of a radical operation. In 5 out of 7 skin cases, healthy granulations replaced the tumor tissue. In 8 patients with malignant lymphomas, there was a complete disappearance of the tumor.

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[2] Riehl, G.: Wien. klin. Wchnschr., 1913, xxvi, 1645.
[3] Wertheim: Wien. klin. Wchnschr., 1913, xxvi, 1648.
[4] Ranzi, E.; Schüller, H., and Sparmann, R.: Wien. klin. Wchnschr., 1913, xxvi, 1651.

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It is evident from a comparison of these various reports that the subject has been approached from different attitudes in France, England and Germany. It is quite easy to read between the lines of Wickham's book a great deal of enthusiasm for the treatment of cancer by radium; it is equally obvious that the Germans have expressed themselves most conservatively. The report of the English institute, on the other hand, draws no conclusions whatsoever, but simply consists of a statement of facts. Nevertheless, a comparison of these reports presented from these different attitudes, discloses a remarkable agreement which it would be easy to confirm by reference to numerous isolated publications on the use of radium from independent workers. Each report justifies the statement that radium produces a selective destructive action on the majority of cancers, but that this action never reaches to the more distant extensions of its deeper and more serious forms. Indeed, there is good ground for belief that unless the greatest care is used in the application of radium, the more distant portions of the tumor will be stimulated to more active growth. All observers of the action of radium on cancer have expressed the belief that an insufficient dosage of radio-activity may stimulate tumor growth. A moment's reflection will make clear how rapidly the total amount of radiation must diminish at points increasingly distant from the center of radiation. Aside from the amount of radiation absorbed, the number of rays diminish inversely as the square of the distance. All users of radium are most emphatic in expressing the belief that no operable cancers, except those of the skin, should be treated by radium in preference to operation.

It is therefore permissible to consider that the true position of radium in the treatment of cancer, with the present methods of application, is a settled matter. While it will destroy cancer tissue in a dosage not affecting normal tissues, it does not cure the disease unless it is quite superficial or of a variety peculiarly susceptible to its influence. The establishment of the fact that we have in radio-activity an agent which will at all specifically affect cancer, is of very great importance — all the more so, inasmuch as no other agent has thus far been discovered which in any degree approaches its effectiveness. A knowledge of these facts offers every encouragement to the belief that a more successful method of applying this remedy may yet be discovered; the lines of experimentation are clearly indicated; the whole question merely reduces itself to the even distribution of the proper dosage throughout all involved tissues. The realization of this end is all in the future and purely speculative. At present, radium may only supplement, but not replace, the knife.

104 East Fortieth Street.

THE AUTOSEROSALVARSAN TREATMENT OF SYPHILIS OF THE CENTRAL NERVOUS SYSTEM

SECOND PAPER

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Professor of Medicine, Indiana University School of Medicine
FORT WAYNE, IND.

Since the publication of my paper on "The Autoserosalvarsan Treatment of Syphilis of the Central Nervous System,"[1] thirteen additional cases have been treated. It is not the purpose of this communication to report these cases. During the clinical study of these twenty cases, however, many practical questions have arisen, a brief discussion of which appears to be timely. The points which I propose to discuss are along the lines of safety, efficiency and convenience. They are three in number:

1. The problem of asepsis.
2. Time of withdrawal of blood for serum.
3. Dosage and dilution of salvarsanized serum.

I. THE PROBLEM OF ASEPSIS

In an early one of my last series of eleven cases an accidental infection of the spinal canal occurred. This patient has completely recovered from the infection, but the possibility of the recurrence of such an accident demanded such a critical review and revision of methods as would make it impossible. The opportunities and dangers of contamination in the preparation of a serum for intraspinal injection by an "open-air method" are manifest. Instruments, receptacles and appliances were above suspicion by reason of the effectiveness of modern hospital methods of sterilization. The skin of the patient at points of puncture,

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[5] Caan: Beitr. z. klin. Chir., 1909, lxv, 773.

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[1] McCaskey, G. W.: The Autoserosalvarsan Treatment of Syphilis of the Central Nervous System, The Journal A. M. A., Jan. 17, 1914, p. 187

41 improved, and 12 did not improve. In cancer of the rest of the body, including practically all varieties, there were only 15 cases apparently cured, 156 improved, and 45 did not improve. Of the 15 cases apparently cured, 4 were skin cancers occurring on the hand and cheek, 3 were cancers of the uterus, 2 were breast-cancers, 1 was a cancer of the thyroid gland, 1 was a cancer of the rectum, 1 was a tumor of the parotid gland, and 2 were sarcomas. Among all these cases the cancers of the uterus, breast and rectum are most significant. Cases 180, 5109 and 5199 have been selected as the cancers of the uterus which were apparently cured. In all three of these patients the cancer had returned after operation. Following radium treatment, there was, in each instance, an entire disappearance of the tumor mass and of all induration. It is supposed that Case 35 was the case of cured cancer of the rectum. It was an inoperable cancer, and after an interval of eight months from the time of its treatment with radium, no sign of the growth could be detected. The improvement in Cases 48 and 186 was so great that only the most conservative judgment could exclude them from the category of the apparently cured. Of the tumors of the breast, one was a case of Paget's disease, and therefore superficial. Case 5100 has been selected as the apparently cured case of cancer of the breast, in which the patient concerned had a recurrent cancer. At the beginning of the treatment she had six nodules the size of a walnut which had recurred in the scar. It is interesting to note that the recurrence in this patient had been unsuccessfully treated with the Roentgen ray before the application of radium.

The foregoing results fully confirm the conclusions of Wickham. With the lapse of time they may prove to be even more significant. At present they in no way alter his deductions and lend no support to the view that radium can be considered a cure for cancer. They convincingly demonstrate that its specific effect on the disease is not limited to any one of its forms.

In Vienna an important work with radium has been established. In June, 1912, the Vienna Radium Institute began its researches with half a gram of radium, an additional gram being furnished in June, 1913. The total amount, 1.5 gm., is very large, and quite sufficient to test the efficacy of radium on cancer. The institute has been founded as a central station for the distribution of radio-activity to the various departments of the Vienna Hospital. Riehl[2] has reported the results obtained by the use of radium on superficial cutaneous cancer, Wertheim,[3] on its application to cancer of the uterus and Ranzi, Schüller and Sparmann,[4] the results of the treatment of cancer of the various organs. Riehl has treated 114 patients afflicted with skin cancer, and his observations regarding its favorable influence on this form of the disease agree with the conclusions of others. He considers that in this form of cancer the application of radium, even in small quantities, is preferable to other methods of treatment. One of his patients may be referred to as an illustration: A tumor the size of a child's head had retrogressed, except for the deeper extension of the growth, which ultimately had reached the esophagus and caused the death of the patient. Wertheim states that he has treated nine cases of inoperable cancer of the uterus, in a number of which the previously fixed tumor again became movable; there was also a considerable reduction in the size of the growth, and altogether the patients improved to such an extent that it was possible to consider radical removal. Notwithstanding all this, it is impossible for him to view even such improvement as at all approaching a cure.

Ranzi, Schüller and Sparmann have treated 53 patients: 6 after operation, for the purpose of preventing recurrence, and 47 with inoperable tumors existing at the time that treatment with radium was instituted. Three of the 6 patients treated palliatively showed an extensive recurrence after a short time. The other 3 gave no evidence of recurrence after a period of three months in 2 of the patients, and two months in the case of the third.

The accompanying table shows the locations and varieties of all the cancers treated.

LOCATIONS AND VARIETIES OF CANCERS TREATED BY RANZI, SCHUELLER AND SPARMANN

	Patients
Sarcoma of the cranium	4
Cancer of the upper jaw	3
Cancer of the neck	6
Cancer of the breast	4
Cancer of the skin	4
Cancer of the penis	1
Melanosarcoma of the skin	1
Cancer of the esophagus	5
Cancer of the stomach	2
Cancer of the rectum	3
Cancer of the interior of the mouth	8
Cancer of the tongue	9
Cancer of the thyroid gland	1
Cancer of the pleura	1
Cancer of the nasopharyngeal cavity	1
	53

Notwithstanding the fact that a series of these cases received a high dosage of radio-activity, in only three instances of the whole fifty-three was there a continuous retrogression of the tumor. One of these three patients had a recurrent cancer of the tongue, about ½ to ¾ inch in diameter; another had a superficial epithelioma of the nose of the benign type, and in this case, while the growth on the nose was healing, a secondary extension of the disease on the upper jaw increased in size; the third patient in this group was a woman with a carcinoma of the tongue, which completely disappeared.

After deducting from the 53 patients 19 who either discontinued treatment or were lost sight of, there remained 34 from whom it was possible to draw conclusions. Of these, 6 died during the course of the treatment; 11 were essentially improved; 6 were very slightly improved, and 3 were made worse. Wertheim concludes with the statement that radium can be considered only a contributory agent in dealing with cancer. It produces solely a limited effect, and therefore its use in operable cancer is equivalent to the denial of principles in dealing with the malignant disease which are already too well founded to permit of question.

The Samaritan Hospital in Heidelberg has also made a report on the action of radium on cancer. This report deserves mention because of the foundation in this hospital of a work devoted exclusively to the cure of cancer, but the value of the work is much less than that of the three institutes already referred to because of the fact that only 20 mg. of radium were available. The report was published by Caan,[5] the details of 130 cases being given, of which 105 had carcinoma and 11 sarcoma. Fifty per cent. of all the cases treated showed the effects of a favorable influence attributable to cancer. Of 38 cancers of the breast a definite improvement was observed in 27 instances. In 8 of the 27 patients a complete retrogression of superficial tumors was noted (in one instance the size of a hen's egg); in 3 of this group of 27 patients the objective improvement was so marked that a previously inoperable growth became shrunken and movable to the extent of permitting consideration of a radical operation. In 5 out of 7 skin cases, healthy granulations replaced the tumor tissue. In 8 patients with malignant lymphomas, there was a complete disappearance of the tumor.

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[2] Riehl, G.: Wien. klin. Wchnschr., 1913, xxvi, 1645.
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In an early one of my last series of eleven cases an accidental infection of the spinal canal occurred. This patient has completely recovered from the infection, but the possibility of the recurrence of such an accident demanded such a critical review and revision of methods as would make it impossible. The opportunities and dangers of contamination in the preparation of a serum for intraspinal injection by an "open-air method" are manifest. Instruments, receptacles and appliances were above suspicion by reason of the effectiveness of modern hospital methods of sterilization. The skin of the patient at points of puncture, and of the hands of operator and assistant, cannot, however, be completely sterilized by any known method. Then there is the possibility that any open receptacle containing blood or serum may have a particle of foreign matter accidentally deposited in it by a gust of air, or the sudden motion of a garment or other fabric during even a brief exposure. It could easily carry many micro-organisms which might be pathogenic, and which during the hours that the ideal culture-medium stands, might produce a massive dose. Even though placed in a refrigerator, a procedure which might easily be somewhat delayed, sufficient chilling to produce effective inhibition might be long enough postponed to permit considerable germination. This may be a remote possibility, but it should nevertheless be removed. The paucity of antibodies in the spinal fluid points to a danger from the introduction of even a few attenuated micro-organisms which might be negligible in the blood with its ample protective resources. Without further preliminary discussion, the technic will now be described.

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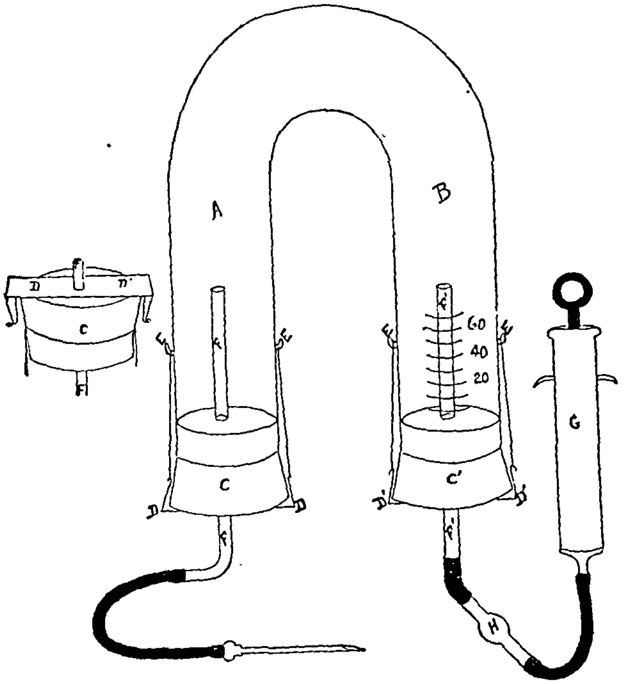
[1] McCaskey, G. W.: The Autoserosalvarsan Treatment of Syphilis of the Central Nervous System, The Journal A. M. A., Jan. 17, 1914, p. 187



Apparatus tor autoserosalvarsan treatment.

The apparatus consists of an inverted U-shaped glass tube, 1½ inches in diameter, each arm being about 5 inches long. One arm of this tube, *A*, is for the reception of the blood, the other, *B*, for the serum after its separation. The latter is graduated. The rubber stoppers *C, C'*, in each arm of the tube are held in place by metal plates, *D* and *D'*, passing across them, and fastened in their turn by fine copper wire to projecting glass hooks, *E*, on the sides of the tube. Through centrally placed perforations in the rubber stoppers and metal plates pass small pieces of glass tubing, *F*, and *F'*, which extend about 3 inches into each arm of the tube. To the small tube *F'*, projecting into the serum arm of the large tube, is connected a vacuum pump *G*, and to the other a needle suitable for puncturing a vein and collecting the blood. At *H* is interposed a small glass bulb containing cotton to filter the air which might be forced into the large tube if the vacuum pump failed to work properly. This outfit, connected as shown in the illustration (excepting that the vacuum pump is left out, because the steam ruins the washers) is properly wrapped and placed in a steam sterilizer and thoroughly sterilized.

When the operator is ready to proceed, the needle, which has been paraffined before sterilization and closed with a stylet, is introduced into a suitable vein, the *dry* skin over which has been painted with tincture of iodin. The vacuum pump is then operated by an assistant and the blood rapidly pours out of the top of the small tube *F* and falls to the bottom of the large tube. It is desirable to procure about 60 c.c. The vacuum pump is then disconnected from the cotton bulb, and air filters in to produce an equilibrium. If the needle is withdrawn from the vein first, *unfiltered* air would rush in, and might carry impurities. The needle is now removed, the bulb *H* transferred from *F'* to *F* and the connecting rubber tubes are covered with sterile gauze and rubber finger-cots, which are tied around the lower ends of the glass tubes.

The apparatus containing the blood is now placed in the refrigerator over night, and in the morning the quantity of separated serum desired is poured into the serum arm of the tube by simply tilting it toward that side. It is next placed in an oven and heated to 56 C. (132.8 F.) for thirty minutes, according to the Swift and Ellis technic. The serum is diluted with normal saline solution which has been placed in the graduated serum arm of the large tube before placing it in the sterilizer. The exact amount will depend on the dose and dilution of the serum which it is intended to give by the intraspinal injection. This must, of course, be determined in advance. For example, if it is desired to give 12 c.c. of serum in 40 per cent. dilution (as advised by Swift and Ellis), 18 c.c. would have been used.

The rubber tube (about 18 inches long and broken at two or three places by short pieces of glass tubing to be used as observation fenestrae), which is to convey the salvarsanized serum to the spinal puncture needle, is then connected to the glass tube *F'*, which is now pulled down until the upper end is flush with the inner surface of the rubber stopper. The serum is then allowed completely to fill this tube to its lower end, all air being, of course, excluded, when a suitable clamp, for instance, an artery forceps, is fastened over the rubber tubing *about one inch from its lower extremity*. This free end, which will remain filled with serum, is later to be fitted over the other end of the spinal needle from which *spinal fluid is emerging*. The clamping forceps are held by an assistant with *sterile rubber gloves*.

I then take the spinal puncture needle, with gloved hands, introduce it into the spinal canal, through skin previously painted with tincture of iodin, withdraw from 5 to 20 c.c. of spinal fluid, which is, of course, retained for laboratory study, and, while the spinal fluid is still flowing, connect the needle with the end of the rubber tube filled with salvarsanized serum.

The apparatus, held by another assistant, is then elevated. The serum usually flows in readily by gravity, but, if it does not, a pressure-bulb is connected with the small tube in the opposite arm and air pumped in through the air-filter, *H*, sufficient to produce any desired degree of pressure.

An aseptic gauze dressing over the puncture wound completes the procedure.

Repeated use of this apparatus has failed to show any defect from the points of view of asepsis, simplicity, cheapness,[2] or convenience. The rubber stoppers alone have to be frequently replaced to avoid leakage, which will occur as a result of repeated sterilizations by heat. With the use of aseptic gloves, the only possibility of serum contamination would be in puncturing the iodinized skin over vein or lumbar spine. If germs can be picked up by a needle in passing through iodinized skin, assuming this to be the best method, then a perfectly aseptic technic is, of course, unattainable. Such dangers are so remote that they can well be ignored in carrying out so effective a method of attack against a fatal disease, relatively immune against all other procedures.

II. TIME OF WITHDRAWAL OF BLOOD

According to the technic of Swift and Ellis, the blood is withdrawn one hour after the intravenous injection of neosalvarsan. If the purpose of the treatment is, either in whole or in part, the introduction of neosalvarsan into the spinal canal, such a delay appears objectionable, unless demanded by other considerations. Wechselmann[3] says that the Abelin reaction for salvarsan disappears in some cases in one hour. The amount of salvarsan in the blood undoubtedly diminishes rapidly from the moment of its injection. Of this fact, which could have been predicted confidently on purely biologic ground, I have fully satisfied myself by testing the blood at different intervals after the injection of the neosalvarsan.

In regard to the intraspinal dosage of neosalvarsan by the Swift and Ellis technic, what are the facts so far as these can be predicated? A full conventional intravenous dose of neosalvarsan contains 900 mg. The average human body is said by physiologists to contain about 3,000 c.c. of blood. A very simple calculation will show us that if this entire quantity of neosalvarsan is evenly distributed in the blood, each 12 c.c. of serum (the amount advised by Swift and Ellis) cannot contain more than $^1/_{250}$ of the entire dose, or 3.75 mg. Of course, in a very few minutes it will be much less, and continue to diminish until at the end of one hour it may not be detectable by the most delicate test.

In an effort to increase the intraspinal dose of neosalvarsan, I have gradually and cautiously shortened the time until now the usual routine is about twenty minutes after the completion of the intravenous injection. In order to secure more rapid uniform diffusion through the circulating blood, the neosalvarsan is injected very slowly, over a period of seven or eight minutes — the approximate time for the complete circulation of the blood. This insures a preliminary mechanical mixture or a general distribution throughout the blood mass, which would not occur if it were injected in one or two minutes. In fifteen or twenty minutes from the completion of the injection, I believe that uniform diffusion may be confidently assumed, and, as any one can easily satisfy himself by the Abelin test, the quantity of neosalvarsan in the blood at this time is several times greater than at the end of an hour.

There has not been, so far as I can determine, any more pain following the intraspinal injection of serum obtained in twenty minutes than with that obtained one hour after the intravenous injection of neosalvarsan. As a general rule, there is no pain of consequence following the intraspinal injection. Occasionally, immediately or even after from six to ten hours moderately severe pain may rather suddenly develop in back and limbs, lasting several hours. There has been no increase in the incidence or severity of this pain since shortening the interval between the intravenous injection and the bleeding.

Much of its therapeutic efficacy, however, may be attributed to the serum *per se* independently of its salvarsan content; the latter is after all the known specific spirocheticide, and I cannot avoid the conclusion that an intraspinal dose of serum containing perhaps between 2 and 3 mg. of neosalvarsan offers more therapeutic promise than one from which it has so completely disappeared as to be no longer demonstrable. I have, therefore, adopted, and advise a twenty-minute interval as above outlined.

III. DOSAGE AND DILUTION OF THE SALVARSANIZED SERUM

With a view of increasing, if possible, the intraspinal dosage and, therefore, the therapeutic efficiency of the salvarsanized serum, I have, again very cautiously, lowered the dilution until in a few cases undiluted serum was used. We found in the laboratory that the undiluted serum, which has a specific gravity of about 1.035, would rapidly settle to the bottom of a test-tube containing spinal fluid, which has a specific gravity of about 1.012. The rate of fall was almost exactly 1 cm. per second. Moreover, it tends to remain at the bottom of the tube a long time, diffusing through the spinal fluid very slowly. This might be imitated to some extent in the lower segment of the dural pouch, and might obviously be objectionable. In from 60 to 80 per cent. dilution, however, diffusion readily occurs. I do not, therefore, use and would not advise lower dilution.

I usually begin with about 15 c.c. of serum made into 50 per cent. dilution. If thought necessary in subsequent treatments, the quantity of serum is increased by varying the dilution without increasing the bulk of the injection. In some cases the original dose is not modified. In obstinate cases this can be done without any untoward effect so far as I can determine in the way of pain or other reaction and, obviously, offers a means of intensifying the therapeutic effect without increasing the bulk of the injection. Just to what extent this is desirable or justifiable is a question of clinical judgment in the individual case.

While it is not my intention, as stated above, to make a further detailed clinical report just at this time, a few words of comment may perhaps be added.

The necessity for and rationale of the treatment, as well as therapeutic results entirely unattainable by other known methods, are receiving additional confirmation with the passing months. One of the most interesting side-lights is contained in a recent contribution by Flexner and Amoss.[4] The experiments there cited, which consist of the intravenous injection of poliomyelitic cerebrospinal fluid, "afford valuable support," to quote the language of the authors, "to the hypothesis that infection of the nervous organs in man occurs through the mediation of the cerebrospinal fluid." To accomplish this transfer (that is, from blood to cerebrospinal fluid), time is required, *since the barrier of the choroid plexus must first be overcome.* At the expiration of forty-eight hours following the intravenous inoculation, the barrier appears still to be intact; at the expiration of seventy-two hours the passage of the virus seems to have begun, since infection of mild type followed the inoculation of the cerebrospinal fluid removed at this period. At the expiration of ninety-six hours, it appears that the barrier had broken down; and it also appears that under the pathologic conditions created, the virus, in quantity sufficient to cause infection, still persisted in this fluid as late as the nineteenth day, although no longer detectable in the blood by the inoculation test. I have several times found clinically what may, I think, be regarded as an analogous condition in *untreated* syphilis. The infection as determined by the Wassermann test had disappeared from the blood, but was still present in the spinal fluid. Such a condition is, of course, common in cases treated through the bloodstream alone.

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[2] This entire outfit costs about $5. The vacuum pump is a staple in the market at $2. The U tubes can be made by any glass-blower for $2 or $3.

[3] Wechselmann: Salvarsan Fatalities.

[4] Flexner, Simon, and Amoss, Harold L.: Penetration of the Virus of Poliomyelitis from the Blood into the Cerebrospinal Fluid, Jour. Exper. Med., April 1, 1914, p. 411.

The modification of the spinal fluid Wassermann test during the progress of these treatments is extremely interesting and variable. It does not always proceed *pari passu* with clinical improvement. For instance, in one of my cases[5] under the care of Dr. Walter Domer of Wabash, Ind., the patient suffering from advanced tabes with great emaciation, complete urinary incontinence, both day and night, insanity of a very marked type requiring constant supervision and frequent restraint, etc., has gained 43 pounds in weight, *has regained control of the bladder during the day,* though he still has nocturnal incontinence, and has so completely recovered his normal mentality that he has resumed his usual occupation. The cerebrospinal fluid Wassermann, however, still remains positive, after eight intraspinal treatments.

In another case of advanced tabes with rapidly progressing disability, the spinal fluid Wassermann was practically negative after two treatments, although no clinical improvement could be noted. Sufficient time perhaps had not elapsed. On the other hand, degenerative changes in the nerve elements may proceed for a time even though the infection has been overcome; and in any event the restitution of these degenerated elements must for the present be considered entirely problematical. A great deal more time must elapse before we shall "get our bearings."

If the evidence thus far at hand, still further strengthened by these experiments, supports the assumption that "infection of the nervous organs in man occurs through the mediation of the cerebrospinal fluid," then obviously the most rational mode of attack, if practical, is through this same "mediation." It is equally obvious that the "lumbar route" offers at once the only safe and available method. That it is practical and therapeutically potential has been shown by the work of the Rockefeller Institute and the clinicians who have been guided by their researches.

The direct injection of a 6 per cent. solution of neosalvarsan into the spinal canal, which is practiced by Dr. Ravaut at Paris and to which attention has been recently called by Wile,[6] does not appear to me to offer the same advantages as the Swift and Ellis technic. The latter observers have warned us of the actual danger in the use of these injections, their warning being based on experimental work with monkeys. This warning should not pass unheeded. Aside from this, however, the practical simultaneous use of the intravenous and intraspinal injections offers a combined attack on the blood and lymphatic side of the infection at every point. Then again the serum introduced into the spinal fluid may readily be assumed to contain important antibodies which may play a large rôle in the therapeutic result. This is especially plausible, because it is quite in line with the well-known facts in regard to the relative amount of antibodies in these two fluids. If it can be demonstrated that the Ravaut method is safe, it might be used to supplement the Swift and Ellis method and avoid too frequent and too intensive intravenous dosage with neosalvarsan.

I wish to express my indebtedness to my clinical assistant, Dr. Miles F. Porter, Jr., for his aid in this work.

CHRONIC DEMENTIA, CEREBELLAR ATAXIA, AND EPILEPTIFORM CONVULSIONS IN A BOY CAUSED BY PTOMAIN POISONING FROM EATING CANNED SALMON *

CHARLES W. BURR, M.D.
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We know little about the direct immediate cause of dementia save in cases associated with visible disease of the cerebral arteries, paresis and senile dementia. Dementia in children has been largely neglected. Persons who are born defective or who become so in childhood we are too prone to classify as idiots or imbeciles and then, so far as study goes, forget. Many of the latter are really suffering from a dementia resulting from an acute acquired insanity. In every asylum for the feeble-minded there are a large number of patients the cause of whose mental illness is unknown, and who, in accordance with the severity of the mental defect, are classed as idiots or imbeciles; those bereft of reason being called idiots, those having some mental power, imbeciles of higher or lower grade. It would be better, as has been suggested by European writers, to use the word "idiot" to include those persons who are suffering from the results of intra-uterine physical disease or accident at birth or illness soon after, without regard to the amount of mental defect resulting, instead of following the present classification, which is purely arbitrary and based on the amount of mental defect no matter what the cause. Under such a classification, the word "imbecile" would mean any person who, on account of inherent weakness, and not from physical disease or trauma early in life, for instance, scarlet fever or a serious concussion of the brain, ceases at any time to develop mentally and then retrograde. Such children differ qualitatively as well as quantitatively from idiots. Of course, there must be some underlying physical defect in them, but it is part of their inherent nature and not the result of accident or acquired disease. The cause probably is often outside the brain itself. Hypothetically, the condition may be explained by abiotrophy, a term introduced by Gowers to explain certain muscular dystrophies in which he assumes an inherent weakness of the muscle-cells which causes them to degenerate under the ordinary stress and strain of life without the increased strain of illness, trauma, or severe emotion. It is possible that this inherent, congenital weakness may occur in the brain-cells in certain persons and result in imbecility. It is a matter of indifference whether the abiotrophy is so great as to prevent any mental development or only sufficient to cause a breakdown later. Another possible explanation is a disorder of one or another of the ductless glands, or a disturbance of the balance between them. Our knowledge of the function of these glands is, however, so fragmentary that it is dangerous to attempt to draw any general conclusions. That disease of one of them may lead to very serious mental trouble is shown in cretinism, which, as is well known, is due to disease of the thyroid. The curious mental state, not very infrequent in Graves' disease, may also be due to thyroid disorder. The hebetude, or at least, if that be too strong a term, the extreme mental slowness, present in almost every case of acromegaly may be either directly caused by disturbance in the function of the pituitary gland or due to the mere mechanical effect of pressure of a tumor of the brain. Our knowledge of the functions and diseases of the ductless glands is still very hazy, but it may, in the future, be proved that the disorder in their functions accounts for some of those people who break mentally in childhood without external cause and without visible cerebral lesion. A very striking difference between idiocy and imbecility, as here defined, is the fact—and I am convinced that it is a fact—that heredity plays relatively little part in the former (idiocy), and a very large part in the latter (imbecility). I have seen many idiots in whose family history I could discover no mental taint. Thus all three children in one family were idiots, not from heredity, but from injury at birth, due to pelvic deformity in the mother. Congenital syphilis, which is not hereditary in the proper sense of the word, also causes idiocy. Almost every imbecile, on the contrary, whose ancestral history I know, came from a family showing a vicious mental strain, either insanity itself, hysteria, epilepsy, extreme eccentricity, or alcoholism, which is itself more often a sign than a cause of illness. By "strain" I do not mean the sporadic occurrence of any of the above-named states in a family, but the repeated appearance of one or several in a family generation after generation.

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[5] *Case 4 in my previous paper (Footnote 1).*

[6] Wile, Udo J.: The Technic of the Intradural Injections of Neosalvarsan in Syphilis of the Nervous System, The Journal A. M. A., April 11, 1914, p. 1165.

* Read at the meeting of the Philadelphia Psychiatric Society, May 8, 1914.

Whatever may be the cause of imbecility, there is still another class of patients, though in the asylums all these are frequently classed together in one group, because the final picture is the same. They are the juvenile dements: people who in childhood present no abnormalities, either mental or physical, and who may have a fairly good ancestral history, but who, after some acute disease, or even in its absence, become demented. The dementia may follow any of the acute infectious fevers—scarlet fever, pneumonia, influenza—just as it may follow infection in adults, or may come on idiopathically. I am inclined to believe that the number of juvenile dements is very large and that true imbecility is less frequent, but it is almost impossible to get correct histories from families who, several years after the illness has begun, send their children to institutions, and for this reason statistics are very faulty.

I shall relate in this paper the history of a boy patient whose dementia is due to a very rare cause, namely, food poisoning. Medical literature is full of detailed accounts of the acute mental symptoms of ptomain poisoning, but I have found no description of chronic cases.

Family History.—There was nothing very striking in the patient's family history except that his father was one of those men who are continuously and uninterruptedly unsuccessful. He was industrious and honest, religious in a sane way, very temperate, but he could never find his niche in the world. Wanting to be thrifty, he was always thriftless and the responsibility of caring for the family rested largely on his wife—a state of affairs which, to reactionaries and conservatives, points toward mental insufficiency on the man's part. This, however, was the only black spot in his character, and to moderns and the disciples of feminism it would look only a very light pearl gray, pretty rather than hideous.

Present Illness.—The boy himself was an ordinary boy, neither good nor bad, neither brilliant nor dull. He was one of five children and had never had any serious illness until he was 14 years old, when the present illness began. Oct. 24, 1909, while at boarding school, he, along with twenty other boys, ate canned salmon. All, in a few hours, became very ill with symptoms of fish poisoning and, several (I think three but I am not sure of the exact number) died. My patient survived but was bed-ridden for some time. Indeed, he had a fever continuing several months. During this time he had a transient hemiplegia, several general convulsions and bed-sores. At times he was delirious. One of the most striking incidents was that, beginning about eighteen months after the onset of his illness, his usually dull and stupid state was occasionally replaced suddenly by an acute delirium lasting from two days to two weeks. He never had any recollection of these delirious attacks. He also continued to have occasional convulsions about once a month though sometimes the interval between was longer. Frequently an attack of delirium followed, but according to the history either might occur independently of the other.

Examination.—My own first examination was made on April 3, 1911, a few days after the beginning of one of the attacks of delirium. I found the patient in bed, ill nourished and with a skin of the dirty yellow-white of half-dried flour-paste. He rambled continuously in his talk, his mind dwelling on love and religion. At times he was profane and obscene. He answered two or three questions as to his name and dwelling-place but beyond that paid no attention to what was said to him. He had no realization of his condition, nor whereabouts. He was foolishly happy, not violent but restless, tried to get out of bed but merely putting a hand on his shoulder caused him, for the time, to cease his efforts. There was no palsy in any part but his gait was very ataxic—a true cerebellar ataxia. In bed he moved his legs well. His knee-jerks were normal. There were two large scars of old bed-sores on the sacrum. He paid no attention to his bladder or rectum. He drank his milk (he was on a milk diet) voraciously but never asked for food. The transient hemiplegia mentioned in the history had passed away entirely and left no marks of its presence.

Course.—He continued in the hospital till June 27, 1911, when I sent him to a suburban rest-house. While in the hospital he had a number of fleeting visual and auditory hallucinations. For the most part they were really illusions—the false interpretation of things seen or sounds heard. Some, however, seemed to be true hallucinations—to have their origin within himself and not externally. He improved quite a little by June and presented the picture of a dementia plus cerebellar ataxia. His gait was made somewhat curious by the fact that, having been a student in a military academy in the South, he seemed to have exaggerated the stiffness of the military attitude so that his gait was a mixture of strut and ataxia. On turning he tended to fall but always recovered himself. He stood with the feet wide apart. His station was not bad and was not made more unstable by closing the eyes. There was a little ataxia in the hands. The knee-jerks were very much increased. There was good control of the bladder and rectum. Articulation was good. The patient had no recollection of having seen me before though I had visited him a dozen times, the last visit having been three weeks before. He had no delusions or hallucinations. He understood simple conversation and answered intelligently, but his mental development, that is, his power of reasoning, so far as we can measure abnormal states with the yardstick of normality, was about that of a 9-year-old boy. He was contented, happy and well-mannered.

On July 6, 1911, the patient walked a little better but was still very ataxic. It was very difficult for him to turn without falling. The knee-jerks were normal. There was no ataxia in the hands. He understood what was said to him and answered questions responsively. His memory for recent events was very poor. He could tell accurately about events of his childhood but he had no recollection of having been seriously ill. He remembered vaguely that while at school he had had some sort of an illness but remembered nothing of its nature; indeed, I am not sure whether he really remembered being ill or only remembered being told that he had been so. He had no recollection of having been brought to Philadelphia from a Southern city, some months before, and did not remember anything about being in the hospital or ’out being sent to the country. He thought he had seen me newhere but was not sure. He was happy, good-natured nd easy to control but rather silly. He cared neither to read nor to be read to. He ate and slept well.

By Aug. 24, 1911, the patient's speech had become slow and drawling. His memory was a little better. When he went to the country he had forgotten how to use a knife, fork and spoon, and frequently even tried to eat soup with a fork. Meal after meal he had to relearn experimentally how to use table-ware. It took him several weeks to learn where his bedroom was and how to go to it from down stairs. These symptoms had passed off by now.

By Sept. 27, 1911, he began to have attacks of headache, at times so severe as to send him to bed. He also was occasionally nauseated but never vomited. His knee-jerks were again increased. He never complained of vertigo.

Oct. 15, 1911, his memory for the geography of the house again became very bad. He knew it was a house, that he was living there, that there were people there to care for him. He recognized the people and remembered their names, but he could not remember how to go from any room on one floor to any room on another. He recognized his own bedroom when within it but when in the hall could not recall which of several doors opened into it. This loss of geographic sense was not confined to the inside of the house. He was lost as soon as he was out of sight of it. This cannot be explained by a dement's mere inability to fix attention and a consequent absence of memory, because by now he remembered people seen and things told him fairly well and, therefore must have had some real power of fixing his attention. He could remember a short story for children.

Between Nov. 18, 1911 and March 4, 1912, he had two general convulsions and five attacks of unconsciousness, lasting from one to several hours, without a preceding visible convulsion. During these attacks of unconsciousness he sat inert, gazing into space and could not be roused. He recovered consciousness slowly and then usually complained of headache. In addition to the convulsions he had many attacks of minor epilepsy. I am inclined to believe that the long periods of unconsciousness really followed attacks of petit mal.

In February, 1912, the patient began to grow in height very rapidly. Previously there had been no growth since coming to Philadelphia. Anatomic sexual development was normal but he was functionally apparently inert. His growth continued during his stay North and has not ceased since his return home.

Examination of Eyes.—Dr. H. Maxwell Langdon examined the eyes in October, 1911, and reported: "Vision in the right eye 6/8, vision in the left eye 6/10. Pupils equal and normal, ocular rotations full and equal, no diplopia. At the limits of lateral excursion there develops a fine tire nystagmus. The media are clear, the disks very pale, with sharply defined margins. No other fundus lesion. The visual fields go well with the atrophic nerves except for the homonymous cut in the upper left field, which strongly suggests a lesion posterior to the chiasm, either an organic exudate or hemorrhage. The optic atrophy is apparently a primary affair—I mean, has not followed an optic neuritis; it may have descended from a lesion higher up in the optic tracts."

Immediately before the patient returned to his home, in the early summer of 1912, his condition was the following: Marked cerebellar gait. Knee-jerks marked. No ataxia in arms. No palsy in arms or legs. Speech slow and drawling. Memory for passing events much improved but still poor. Power of attention poor. Read a little. Wrote short and childish but coherent letters. Liked to play with children. Polite in manner. Disposition good. Geographic sense recovered. He continued rarely to have severe general convulsions and quite often minor attacks, but his attacks of long lasting unconsciousness ceased to occur several months before leaving Philadelphia.

When I last heard of the patient a few months ago he was somewhat better. He cared more for reading and read more mature books. He talked less like a child. His ataxia continued. He undoubtedly was quite demented, though to his mother's eyes he had improved greatly.

The case has many points of interest. First, as to the naming of the mental condition. Should we call the boy an imbecile or a dement? In view of his history, he is of course a dement, but if he were to be seen now by one who knew nothing of his past I think he would be classed as a rather high-grade imbecile with some intercurrent organic nervous disease. There is no way to tell, from a mere examination of a boy free from physical defect, whether he is one or the other. Yet for scientific purposes it is important to keep apart children who break from inherent weakness and those who require a serious stress to overthrow their mentality.

I have been unable to find any case with a similar cause in the literature. I do not say others have not been reported, because my experience has been that as soon as one claims uniqueness in a patient in print, similar cases, previously hidden in obscure journals or forgotten proceedings of societies, come to light. It must, however, be extremely rare, as its possibility is not even mentioned in the text-books. A rather large number of cases of acute delirium from food poisoning are recorded, but the patients either died or soon recovered. That salmon poisoning was the cause in this case there is no doubt. The history proves it. The only possibility of error would be the simultaneous occurrence of two illnesses, the poisoning plus, say, cerebral syphilis. The latter, however, can positively be excluded.

The combination with dementia of physical symptoms referable to the cerebrospinal axis and surely due to gross organic disease is, in persons so young, very rare. In many ways the case clinically resembles juvenile paresis. The dementia, the drawling speech, the silly happiness, without, however, any distinct delusion of grandeur, the ataxia, the (for a time) increased knee-jerks, the epileptiform convulsions, all make the picture of paresis. The factors in the case against its being paresis are the absence of congenital syphilis (every case of juvenile paresis I have ever read of or seen occurred in youths with a history of parental syphilis), the very rapid onset, and the seemingly permanent improvement coming on slowly and extending over a length of time greater than that of a remission in paresis. This partial cure I emphasize because I cannot conceive, in the present state of therapeutics, of even a partial permanent cure of true paresis. I do not think that the absence of syphilis is of so much importance, because I can well believe that some other intoxication might affect the brain precisely as syphilis does. The case in no way looks like dementia praecox unless that much-abused term is to include all kinds of insanity that attack the young.

The patient's isolated loss of memory for places was most unusual. At a time when his memory for faces was fairly good and when he could remember things told him quite well, he could not learn the geography of the house and surrounding fields. Of course, it requires more fixity of attention to learn a house than it does to listen and fix in memory a thing said, but it seems to me that lack of attention does not explain the condition. The patient seemed to have a local memory loss comparable to amnesia for words.

That there is a real organic lesion present I think is sure. I fancy the patient has a pretty wide-spread cortical lesion affecting most markedly the intellectual centers and the cerebellum and probably primarily attacking the nerve cells rather than the arteries. The long continuance of the illness, together with the character of the symptoms, is against a merely functional disorder and the optic atrophy is positive evidence of organic disease. I think we may assume that the optic atrophy is a visible sign of similar changes in the brain itself.

1918 Spruce Street.

PREGNANCY AND LABOR COMPLICATED BY CARCINOMA OF THE CERVIX UTERI

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Cancer complicating pregnancy and labor is of such rarity and the calamity of such a complication is so grave that it excites the deepest interest and attention.

De Lee and Hirst, each quoting the statistics of Sarwey and Kerr cite twenty-six cases occurring in fifty-seven thousand pregnancies, or approximately once in every two thousand pregnancies. This ratio is accepted by Edgar, Williams, Ashton and others. De Lee also cites a series of fifteen thousand consecutive maternity cases occurring in the Chicago Lying-In Hospital with only one case of cancer of the uterus arising as a complication. Since these patients were of the usual social standing of the average private practice he thinks this is a fair estimation for such an occurrence in private practice. It is evident by referring to the statements of such standard authors that the condition is more often seen in the cases in the charity wards than in private practice. It is noteworthy that in America this condition is more frequently found among the immigrant strata and among negroes than among American-born white persons. The relatively small number of such cases is evident when men of large experience in the city hospitals have never seen a case.

On account of the environment but little information can be obtained regarding the course of pregnancy, especially during the early months. It is evident, however, that the advent of pregnancy greatly favors the inroads of cancer, when they coexist; during gestation and the puerperium the progress of cancer is astonishingly rapid, especially in the latter period. Because of the influence of pregnancy an enormous increase in the blood-supply of the uterus occurs, inviting rapid infiltration and metastasis, while during the puerperium rapid necrosis takes place.

It is impossible to accurately estimate the death-rate in this condition, but it is believed to be nearly 100 per cent.; a cure being a most unusual triumph. Edgar, in discussing this subject, says that in 15 per cent. of such cases miscarriage occurs before the period of viability, and that in 33 per cent. of the remainder the children die during labor or shortly afterward.

The course of labor in the cases complicated with carcinoma of the cervix is attended with grave danger. If left to the natural course, death from hemorrhage of the friable but resisting lower uterine segment is very probable. The anemia, as well as the uterine infiltration, greatly predisposes the patient to general and local inertia; ultimately death ensues from shock, hemorrhage and sepsis. The course of labor is prolonged, often continuing several days; it is ineffectual in its mechanism, owing to the undilatable cervix and inefficient pains; it often terminates in the rupture of the uterus or maternal death from shock while still undelivered.

When there is a bare possibility of effecting a cure of the cancerous condition complete hysterectomy should be done as early as possible. The interests of the mother are to be considered whenever there is a reasonable hope that a cure may be effected and the Wertheim operation performed, regardless of the stage of gestation. Should the case be hopeless, so far as the interests of the mother are concerned, the welfare of the child is to be made paramount and an attempt made to reach the latest period in the course of pregnancy. This position is the consensus of opinion of both operators and authors.

At the end of the gestation period abdominal cesarean section with complete hysterectomy is the most popular treatment when it is hoped that both mother and child may be saved. In the cases in which the mother is beyond help abdominal cesarean section followed by complete hysterectomy when possible, or extraperitoneal treatment of the cervical stump after the amputation of the uterine body seems to be the most popular view at present. Ashton advises the amputation of the uterine body above the cervix in such cases and closes as in supravaginal hysterectomy for the purpose of closing off the cancerous mass. Duhrrsen recommends vaginal cesarean section, saying that it can be done as late as full term, delivery being followed by complete hysterectomy by the vaginal route.

It would seem that the control of hemorrhage, sepsis and shock would be more perfect by abdominal cesarean section and the chances of the infant greatly increased, while by natural birth or operative delivery by the birth-canal both mother and child would be more exposed to danger.

REPORT OF CASE

Mrs. I. D., a well-nourished Italian woman aged 34, housewife. Family and previous histories negative.

Genital History.—Menstruation began at 14 years and until what seemed to be the beginning of the present illness was always regular in time, quantity and duration. Menstruation was slightly painful, periods lasting from three to four days and were moderate in amount. Patient married in 1903. Since that time there have been four pregnancies to the present illness, all terminating normally at full term; no miscarriages.

Present Illness.—This patient was first seen by me in consultation with Dr. Mary Holmes on April 22, 1913. She then complained of severe aching pain in both tubo-ovarian regions. For a period of two months there had been loss of flesh and strength with continual headache and backache. There had been urinary tenesmus, dark, bloody, foul-smelling vaginal discharge extending over a period of three months. At various times she had lost considerable blood from the vagina.

Examination.—Chest normal, abdomen enlarged symmetrically, showing presence of old and new striae. Fetal parts and fetal heart-sounds were easily made out, the heart beating at the rate of 120 beats per minute. The position was left occipito-anterior. Fetal motion was perceived. The infant was vigorous and had apparently reached the sixth month of gestation. Vaginal examination at that time revealed foul-smelling bloody, purulent discharge. The cervix was large, elongated, hard, nodular and bled very freely when touched. A portion was examined microscopically and found to be carcinomatous. It was also evident that the case was one of advanced carcinoma, since there was fixation of the uterus and vaginal infiltration. So far as a radical cure was concerned the case was hopeless. The blood-pressure was found to be 100 mg. and the hemoglobin estimated at 80 per cent.

The diagnosis of cancer and pregnancy was made and the interests of the infant made paramount. Every effort was made to forestall premature labor in the hope that cesarean section would deliver a living child if an advanced stage of pregnancy could be reached.

The patient was put to bed, given morphin liberally, encouraged to take nourishing food and given salt solution by the bowel daily. On June 12, 1913, labor ensued at approximately the thirty-second week of pregnancy and after a few hours the patient was exhausted by the pains and shock. Since no progress had been made in dilating the cervix cesarean section was advised and performed as soon as the patient could be transferred to the Columbia Hospital for Women. At the beginning of the anesthesia the baby's heart could be faintly heard, but in spite of rapid delivery it was still born, much to our regret.

Amputation of the uterus above the cancerous mass involving the cervix was done and it was planned to treat the cervical stump extraperitoneally. It was possible to do this, since the cervix could not be lifted out of the pelvis and could not be attached, so great was the infiltration and necrosis of the tissues. Closure in the usual method, as in supra-vaginal hysterectomy, was made after the cervical stump was thoroughly painted with full strength tincture of iodin. There was little hemorrhage, the abdomen was closed without drainage and there was no sepsis or wound infection.

Most extensive evacuation of the vaginal vault followed in spite of actual cautery with the angiotribe. The patient died six weeks after operation. She was out of bed but her failure in general ways was excessively rapid.

I believe that such cases can be safely closed by removing the body above the cancerous mass, thus doing away with the uterus that invites further extension and contamination. It is possible in this way to close off the necrotic cervical stump with pelvic peritoneum as in ordinary incomplete hysterectomy. By operating as soon as labor was evident, before shock had occurred and the patient thus exhausted, it is possible that this baby could have been saved; since it had always been vigorous until the day of operation. Abdominal cesarean section evidently was the only possible means of delivering this infant alive.

I am grateful to Dr. I. S. Stone for his advice and also to Dr. Mary Holmes for the courtesy in allowing me to see this patient.

The Burlington.

PARAFFIN CANCER

COAL AND PETROLEUM PRODUCTS AS CAUSES OF CHRONIC IRRITATION AND CANCER *

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It is customary to include in any summary of the causes of cancer the blanket term "chronic irritation." Prominent under this heading are the inflammations peculiar to the influence of tar, paraffin, anilin, tobacco and soot; lupus vulgaris (a small proportion) and other types of cutaneous tuberculosis; ulcerating syphilis, rarely; irritated warts and pigmented moles; cicatrices, especially from burns or chronic leg-ulcer; circumscribed keratoses — cutaneous horns — callosities, palmar and plantar arsenical lesions; leukoplakia buccalis and lesions in the neighborhood of jagged teeth, senile keratomas.[1] Hyde[2] mentions exposure to sunlight, while the almost mathematical certainty with which cancer may be induced by the Roentgen ray has become a matter of common knowledge.

The dermatitis resulting from paraffin irritation was first discussed at length by Volkmann,[3] who distinguishes an acute and a chronic stage. The acute stage expresses itself in various eruptions that are at times acneform and at other times exhibit broader papules. In other cases there are severely inflamed, partly confluent nodules and boils. But few workers in the fluid products in the manufacture of paraffin escape this condition. The acute stage lasts several months, and then the skin becomes accustomed to the contact of the aforesaid material so that the severely inflamed, moist and itching skin-changes no longer develop. Instead there now developes an increased formation of epidermis with an exaggerated secretion of the oil glands. The papules, boils and nodules shrink and form flattened, psoriasis-like spots with here and there rust-colored pigment spots. They may likewise leave behind whitish scars. The skin becomes dry, parchment-like or scaly and fissured. The hyperplastic epidermis cells lead to the formation of either circumscribed or more diffuse horny thickening. Mixed with a lesser or greater amount of sebaceous secretion, they form seborrheic plaques and crusts. Volkmann compares their appearance with hardened wax drops. When abundant they may present a resemblance to ichthyosis. The skin affection has been called "tar itch" by workers in this material. With the further development of the disease there develop multiple warty growths which later singly or in numbers degenerate into carcinomas. This final stage is described by Volkmann as follows:

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* From the Surgical Clinic of Dr. Arthur Dean Bevan, Rush Medical College.

[1] Hartzell: Jour. Cutan. Dis., 1903, xxi, 393.
[2] Hyde: Am. Jour. Med. Sc., 1906, cxxxi, 1.
[3] Volkmann: Samml. klin. Vortr. (Volkmann's), 1875, i, 370.

As a result of individual predisposition and particularly deficient cleanliness, the process, which previously has been a hyperplastic epidermic growth and sebaceous secretion, now develops into multiple, warty or papillary formations, some of which degenerate into cancer. In some cases the sebaceous crusts described above exhibit almost a horn-like consistency. The chief seat of these hyperplasias are the exposed forearms and the scrotum. In an old workman Volkmann counted fifteen such warty growths with thick crusts on the dark-brown spotted and fissured forearm, and three on the scrotum. This picture of warty growths completely suggests the "verruca cancerosa" of the aged.

Schamberg[4] tabulated the reported cases of cancer in tar and paraffin workers up to 1910 and remarked on their frequent tendency to undergo spontaneous involution. Many of the lesions ulcerate and destroy themselves. Of 27 cases described occurring among 18 paraffin workers, 6 workers in fluid tar and 3 employees in coal briquet factories, the lesions were on the scrotum exclusively in 8; on the scrotum and thighs in 3; on the scrotum and arms, hands, legs or face in 7; in 9 the scrotum was not involved, the lesions being distributed on the arms and hands in 7, on the face in 1, and on the face, back, arms and hands in 1. In 13 the lesions were multiple and so situated as to render auto-inoculation, or growth by metastases, as an explanation of this multiplicity, unlikely. There were 7 deaths reported, 2 due to recurrences after operation and 4 recoveries. The final outcome in the remaining 16 was not stated. Metastases occurred late in the disease and were usually lymphatic.

The source of the tar seems to be of great importance from the point of view of its power to damage the skin of workmen. In Great Britain "gas-works tar" as a rule produces dermatitis with the accompanying danger of malignant degeneration, while "blast-furnace tar" does not.[5] One explanation of this difference, experimental demonstration of which has been offered, is that "gas-works tar" contains substances which are capable of inducing cell division *in vitro*, and of causing the production of tumor-like masses in experimental animals, while "blast-furnace tar" does not. Pure paraffin apparently is not concerned in the production of cutaneous abnormalities, but the irritating substances seem to be present in crude paraffin as bodies having possibly an amidin $(N - C = N)$ nucleus, and associated particularly with compounds of the anthracene group. The greater portion of them are separated from paraffin probably with the thick, heavy oil analogous to the "pressed distillate" to be described later.

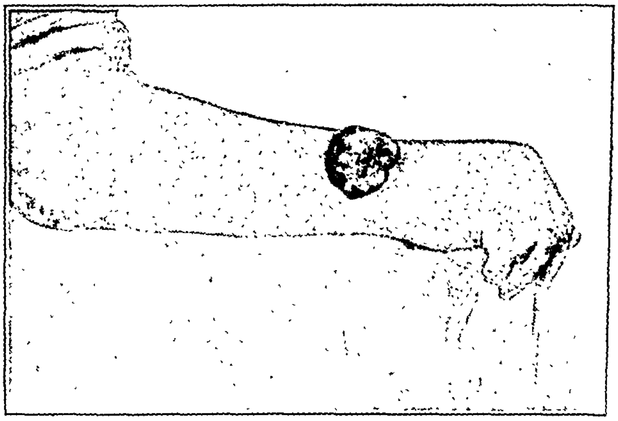
Study of the case which I wish to report through the courtesy of Dr. Arthur Dean Bevan reveals the following facts:

History.—The patient, A. P., man, aged 52, married, Hungarian, a laborer, entered the Presbyterian Hospital on the service of Dr. Bevan in March, 1913, at which time the following notes were made:

"A. P. is the oldest of thirty-two employees in the paraffin-refining department of a large oil-refining company located near Chicago. He states that after working in the refining department for a while all the workmen develop an eruption on the skin of that part of the arms which is immersed in the oil. The skin becomes slightly discolored, pigmented and thickened in circumscribed regions, sometimes to the extent of forming warty excrescences. One such growth on the patient's arm has been gradually increasing in size for the past two years until at present there is a cauliflower-like excrescence on his right arm just above the wrist, about the size of a silver dollar. Usually the patient has been able to abort such growths by the use of home remedies, but this one has resisted all his efforts.

"A. P. has been employed for over twenty years in the same department, longer than any one else, and only one other employee has at the present time a growth which resembles his. Except for this the patient is well.

"*Physical Examination*.—On the posterior aspect of the right forearm just above the wrist is a round, elevated, ulcerated, cauliflower-like growth. It is not painful or tender, and is about the size of a silver dollar. The skin of both forearms is slightly pigmented and is curiously mottled with regions that are brownish in color, slightly elevated, somewhat rough to the touch with a tendency toward scaling, and varying in diameter up to 7 or 8 mm. There are no other abnormalities.



Appearance of gross lesion in paraffin cancer; note mottling of the forearm.

"A section taken from the tumor and stained presented the picture of a typical epithelioma with pearls.

"*Operation*.—March 6, 1913, an oval incision was made about the epithelioma down to the muscles, and the tumor with the adjoining skin and fascia was removed in one piece. Thiersch grafts were used to cover the defect. The wound was dressed with gutta percha strips and gauze. The patient was discharged on the twenty-third day with wound completely healed. There was no sign of recurrence when the patient was seen six months later."

Investigation at the oil company's plant disclosed conditions about as follows:

Skin lesions attributable to their occupation were found only in the men employed in the press-rooms. Here the crude paraffin is run into great presses and the oils, "pressed distillate," expressed. The paraffin remaining in the press, so-called slack wax, is scraped off by men who use spade-like instruments and usually work bare-handed with sleeves rolled up above the elbows. During this process the workmen become pretty thoroughly smeared with the pressed distillate. The work is done at room temperature. During the first few months of employment in this department the majority of the workmen suffer from "wax-boils" affecting any portion of the skin, but particularly the arms and neck. The susceptibility to this trouble, which appears to be a species of furunculosis, may disappear in time to a very large extent. A certain proportion of the workmen, however, will develop still further lesions. Thus after a number of years pigmented spots make their appearance; some of these are scaling and psoriatic, others merely rust-colored areas varying in diameter from a few millimeters to a centimeter and a half; these may be followed by wart-like growths of slow development amenable to various common remedial measures; finally, true epithelioma, as in the patient A. P., may appear. These changes are seen only in those employees who come into intimate and nearly continuous contact with the "pressed distillate" for a period of years. Wax-boils and the subsequent lesions are unknown among the workers in the finished paraffin and among the men who handle the crude oil.

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[4] Schamberg: Jour. Cutan. Dis., 1910, xxviii, 644.

[5] Ross, Cropper and Ross and Associates: Researches into Induced Cell Reproduction and Cancer, and Other Papers, 1911, i, 1912, ii, and 1913, iii; the John McFadden Researches.

Inquiry at two other paraffin-refining plants, one at Cleveland and the other at Franklin, Pa., revealed conditions similar to those at Chicago, with the exception that less than 1 per cent. of the employees were said to be affected at all, and no cases of cancer had been observed. One manager says:

> In this connection, however, I would state that by the present methods of handling paraffin the men do not come as much in contact with it as they did years ago by the old process. Formerly there were a great many men employed at this work who suffered considerably from wax-boils.

Another writes:

> It is our general belief that if the men are perfectly clean, that is, wash themselves carefully after they finish their work, they never have any trouble.

A request for information as to the chemistry of the pressed distillate brought a reply from the chemists of the oil company, which is here quoted in part:

> Very little is known of the scientific chemistry of the oils you mention. Of course, we know a great deal about how they behave in a practical way. Generally speaking, I would say that 90 per cent. of this oil is composed of completely saturated members of the paraffin series C_nH_{2n+2}. Such bodies are perfectly inert and could not be active from a physiologic standpoint. The other 10 per cent. is composed of unsaturated bodies, perhaps of the series C_nH_{2n} and they could act as irritants or in some other way be detrimental to a person's health.

Attempts to induce tumor-like lesions in animals by the use of "slack-wax" and "pressed distillate" have so far been unsuccessful.

Closely allied with the subject of tar and paraffin cancer are the cases of tobacco cancer, cancer in workers in anilin dyes, chimney-sweep's cancer and the so-called kangri-burn cancer of India.

TOBACCO CANCER

In 1850 attention was directed to tobacco cancer by Melzer,[6] who reported on the incidence of cancer at the General Hospital at Laibach for the years 1787 to 1849, inclusive. Of the 27,800 patients treated, 433 had cancer; of these, 142 were on the lip. The patients were all in late adult life; 127 were men, 15 were women. These people were in the habit of smoking wooden, copper-sheathed pipes, with stems so short — not over 2 inches in length — that when in use the bowl of the pipe came almost into direct contact with the lips of the smoker. Melzer felt that the connection between the use of this pipe and the cancer of the lip was obvious. Of 350 cases of cancer of the lip in which operation was performed by Sir Thornley Stokes,[7] only three were in women, but all were assiduous smokers. These patients were peasants from the west of Ireland, and Stokes believed that their use of short clay pipes was directly associated in a causal manner with the production of their cancers.

A good deal of emphasis has been placed on the fact that cancer of the upper extremity of the digestive and respiratory tracts is predominatingly a disease of the male sex — the sex that is especially addicted to the use of tobacco — and that this is the location at which one might expect the lesions resulting from the use of tobacco to manifest themselves. Russell[8] points out that the incidence of cancer of the jaw and especially of the tongue increased 228 per cent. in forty-one years, while the habit of smoking more than doubled during the same period. In Switzerland during the years 1905 to 1909, cancer of the lip was five times more frequent in men than in women; cancer of the tongue, ten times more frequent in men, and cancer of the larynx, parotid gland and pharynx seven times more frequent, while the total mortality of the two sexes from cancer was almost equal.

Leukoplakia buccalis is usually the first evidence of the harmful local effect of the use of tobacco, and conversely, excessive smoking—according to Pusey[9]—is perhaps the most important source of irritation in producing the leukoplakia. "The condition is without subjective sensation. Its importance lies in the fact that it is very frequently the site of cancerous degeneration."

The substances in tobacco which act as local irritants predisposing to cancer are probably not confined to the smoke, but also appear to be present in tobacco-juice. Von Esmarch[10] in 1873 remarked that the cases he had observed of severe papillary cancer of the mucous membrane of the mouth and of the gums in youthful subjects had occurred in those who chewed tobacco, and von Langenbeck[11] mentioned two cases of cancer of the buccal mucous membrane, due to holding masses of tobacco against the cheek.

Tobacco is one of the important constituents of "betel-nut," which is chewed so extensively by the inhabitants of various tropical countries.[12] The betel-nut, more properly called the areca-nut, is produced by the areca palm.[13] The nuts grow in clusters beneath the crest of the palm, in a similar manner to the cocoanut. Areca-nuts are very similar to large nutmegs, both in size and appearance, and, like cocoanuts, are enclosed in an outer husk of a fibrous texture. "The consumption may be imagined when it is explained that every native (of Ceylon) is perpetually chewing a mixture of this nut and betel leaf. The betel is a species of pepper, the leaf of which very much resembles that of the black pepper, but is highly aromatic and pungent. . . . To make a 'chew': Take a betel leaf, and on this spread a piece of chunam (lime made from burnt coral) as large as a pea; then cut very thin slices of areca-nut and lay them in the leaf; next, add a small piece of ginger; and lastly, a good sized piece of tobacco. Fold up this mixture in another betel leaf." Cancer of the cheek is common among these people, the lesion appearing at the point against which the betel "cud" is habitually lodged. In the hospitals of Madras during the years 1892 to 1901, inclusive, 4,270 malignant tumors were observed,[8] constituting 2.5 per cent. of the total number of hospital cases. In nearly one-half of the cases the site of the cancer was the mouth or tongue of patients who habitually chewed "betel-nut." Dr. G. G. Davis, in a personal communication, says that he finds a high incidence of mouth cancer among Filipino betel-nut habitués. Baker[12] supposes the disease to result from the irritation of the caustic lime which the "chew" contains; but the possible importance of the other ingredients should not be forgotten.

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[6] Melzer: Jenaische Annalen, 1850, ii, 480.

[7] Stokes: Practitioner, London, 1903, lxx, 577.

[8] Russell: Preventable Cancer, 1912.

[9] Pusey: The Principle and Practice of Dermatology, 1907, p. 993.

[10] Von Esmarch: Quoted by Leuenberger, Footnote 16.

[11] Von Langenbeck: Quoted by Leuenberger, Footnote 16.

[12] Baker: Eight Years in Ceylon, London, Longmans Green & Co., 1902.

Tobacco-smoke, according to Ludwig's[13] analyses, contains ammonium carbonate, ammonium acetate, acetic acid, phenol (carbolic acid) and tar. Other observers have mentioned pyridin bases and empyreumatic oils. Which of these bodies is the irritant which induces leukoplakia and cancer, or whether several of them may not present the requisite irritating qualities, is beyond our ken. It is possible that phenol may be exonerated,[14] but further speculation does not appear to be warranted.

ANILIN DYE CANCER

Formerly it was supposed that workers in anilin dyes were free from lesions induced by their occupation;[15] but the demonstration that deaths from bladder tumors are thirty-three times as frequent among dye workers as among the population in general,[16] and the experimental production of epithelioma-like tumors in man[17] and in animals[18] by means of a great variety of anilin derivatives and products of tissue decomposition,[19] has thrown the actual relation into bold relief. The substances possessing the necessary irritative qualities resemble each other in that they are hydroxylated aromatic amido-bodies. Most of them are distinctly coal and petroleum products and, therefore, the chronic-irritation tumors which they induce belong in the tar and paraffin cancer group.

CHIMNEY-SWEEP'S CANCER

Chimney-sweep's cancer is undoubtedly due to the irritation of soot and has been regarded as a clinical entity since its description by Percival Pott[20] in 1775. It is a typical epithelioma, occurring as a rule on the scrotum — although arms, hands and thighs may be attacked — and running a very chronic course leading to ulceration, metastases and death if not interfered with. The disease is rarely seen except in England and seems to be associated etiologically with the kind of coal which is there used for fuel. Curling[21] says that pit-coal, from which soot is produced, is very sparingly employed as fuel elsewhere than in England, and Baum[22] has shown that chimney-sweep's cancer was unknown in Hanover until wood was supplemented by coal for fuel.

During the years 1900, 1901 and 1902, the comparative mortality-figure[8] for cancer among English chimney-sweeps from the ages of 26 to that of 65 was 133 as compared with 63 among occupied males at the same ages. Apparently, soot produces irritation of the skin similar to that produced by paraffin and tar, and with similar results.

KANGRI-BURN CANCER

In 1910 E. F. Neve[23] reported on the occurrence of the so-called kangri-burn cancer. Of 4,902 tumors removed by operation in the Kashmir Mission Hospital in the course of twenty-five years, Neve found that 1,720 were malignant; of these 1,189 were epitheliomatous and 484 were on the thighs or abdomen and were due apparently to the irritation of the kangri, a portable fire-basket carried by the people under their clothes.

Kangri-burn cancer is a typical squamous-celled epithelioma. In the early stages the malignancy is slight, the glands are slow to become infected and the disease is readily amenable to operation. It is demonstrably due, according to Neve, to a definite cause, namely, irritation from the constant application of heat. The preepitheliomatous skin changes resemble closely those seen in paraffin- and tar-workers. It is extremely common to find dry, scaly, pigmented spots or patches slightly raised from the surface. The skin is often mottled and pigmented, and shows the lines of distribution of superficial veins. Horny tumors are not rare, and sometimes at their base transition into epithelioma can be demonstrated. There is also a condition allied to chronic eczema in which there is redness and a tendency to desquamation. This gradually shades off into the actual formation of scar-tissue. Objection may justly be raised to Neve's dogmatic assertion that such changes are due to irritation by heat, for the skin of these patients is subjected to other causes of irritation in the soot and gaseous emanations from the fire-baskets.

SUMMARY

The similarity of the lesions following the types of chronic irritation which have been briefly described suggests the probable similarity or possible identity of the irritating agents or agent concerned. Is this factor merely the mechanical effect of the presence of minute foreign bodies — soot — on and in the skin? Probably not; and the best argument against the idea seems to be furnished by the fact that workers in blast-furnace tar escape cutaneous involvement while workers in gas-works tar usually suffer from skin lesions, and the exposure to tar or pitch-dust is the same in both cases. Can the lesions be the result of prolonged exposure to heat and repeated burns? Probably not, because this would never account for the bladder tumors of anilin-workers, and most of the labors of paraffin- and tar-workers and chimney-sweeps are carried on at room temperature or outdoors, and these men are not the victims of frequent burns. This brings us to the assumption that there is some chemical body (or bodies) resident in certain coal and petroleum products which are capable of inducing inflammatory productive reactions in tissues and eventually atypical, unrestrained proliferation of epithelial cells. In favor of this suggestion let me cite several facts.

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[13] Ludwig: Arch. f. klin. Chir., 1877, xx, 363.

[14] Tillmanns: Ztschr. f. Chir., 1880, xiii, 519.

[15] Grandhomme: Die Theer Fabriken, Heidelberg, 1883.

[16] Leuenberger: Beitr. z. klin. Chir. (von Bruns), 1912, lxxx, 208.

[17] Stoeber: München. med. Wchnschr., 1910, lvii, 709.

[18] Fischer: Munchen. med. Wchnschr., 1907, liv, 879.

[19] Stoeber and Wacher: Munchen. med. Wchnschr., 1910, lvii, 947.

[20] Pott: Chirurgical Works, London, 1775, p. 734. (See Schamberg, Footnote 4.)

[21] Curling: Die Krankheiten des Hodens, Samenstranges und Hodensackes, Deutsch von Reichmeister, Leipsic, 1845.

[22] Baum: Quoted by Posner, Ztschr. f. Krebsforsch., 1903, *i*, 4.

[23] Neve: Brit. Med. Jour., 1910, ii, 589.

Physicians of large experience in paraffin prosthesis demand paraffin of the very highest purity for their work, because it seems that paraffinomas, that is, inflammatory tumors which occasionally develop at the site of a paraffin injection, are especially apt to appear following the use of paraffin of inferior grade.

Epithelioma develops earlier and with greater malignancy in workers in fluid tar and paraffin than in those who are subjected merely to the dry dust and soot. This observation agrees with the generalization that substances are most active chemically when in solution.

None other than a chemical cause seems possible in relation to the bladder tumors of anilin workers, and to the betel-nut and tobacco cancers.

Ross, Cropper and Ross[5] assert that they have demonstrated the existence of a number of chemical bodies, twenty-five or thirty, which are capable of inducing cell division *in vitro;* these bodies they term "auxetics." Auxetics have been demonstrated in gas-works tar but not in blast-furnace tar; moreover, Bayon[24] was able to induce atypical epithelial overgrowths in animals by the use of gas-works tar containing auxetics, while experiments with the auxetic-free blast-furnace tar resulted negatively. Ross, Cropper and Ross place certain products of tissue decomposition among the auxetics and suggest that the latter may be responsible for the proliferation of tissue which occurs in healing wounds, and that their continued presence in tissues for a long period, as in areas subjected to "chronic irritation," may be the factors which determine malignant degeneration in such areas.

Schamberg suspected radio-activity as the possible exciting force in tar products, but its presence could not be demonstrated in specimens examined for him at the University of Pennsylvania.

CONCLUSION

It would seem fair to assume that the chronic-irritation cancer produced by coal and petroleum products is a chemical-irritation cancer, and that it is not impossible that the cancer following chronic irritation of other origin may be of an essentially similar nature.

I am greatly indebted to Dr. Arthur Dean Bevan for permission to report this case and for assistance in gathering data on it.

122 South Michigan Avenue.

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[24] Bayon: Lancet, London, 1912, clxxxiii, 1579.

Mental Diseases.—We talk a great deal about the human mind, and, when cornered, quote Hamlet to cover an unpleasant ignorance of its true nature. The modern student, like the ancient, takes his stand either with Plato and compares the mind and brain to a player with his musical instrument, or with Lucretius to a musical box wound up for so many years to play so many tunes. Authorities lean to one or other of these views, and I have a shrewd suspicion that some of our distinguished visitors, great representatives in this specialty, do not see eye to eye in this matter. Three things we do know, departures from normal states are extraordinarily common—they are the most distressing of all human ills—they should be studied systematically by experts, with a view to their prevention and cure.—Osler: Specialism in the General Hospital.

ELEPHANTIASIS AND THE KONDOLEON OPERATION *

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In my section of the country, elephantiasis is certainly an uncommon disease. My only case, and the only one so far recorded by any observer from this state, is the one herewith presented. By a fortunate circumstance, about the time this patient was admitted, there came from Dr. Rudolph Matas[1] of New Orleans his monograph on elephantiasis, which sums up all that is known of this disease and its kindred affections up to the present time, and to which I am indebted for valuable information. Particularly do I wish to testify to the benefit derived from an operation proposed by the Greek surgeon Kondoleon, to whom Matas gives full credit.

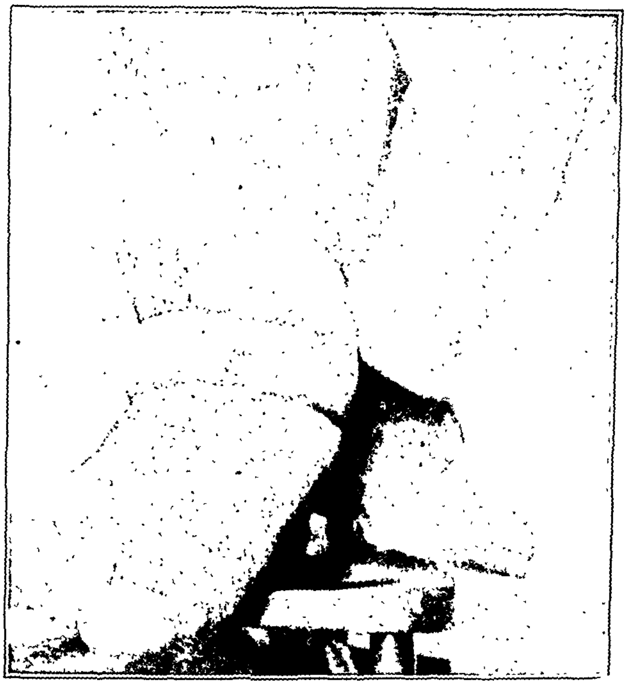

Fig. 1.—Elephantiasis of leg, front view.

History.—Charles P., a mulatto, aged 23, was referred to me in December, 1913, by a physician in Sanford, N. C., with the suggestion that I should amputate his leg. The patient was willing to submit to amputation, since he was no longer able to do his work as a cook. Born in Virginia, he went to Philadelphia at the age of 16, and after twelve months shipped to Florida. For two and a half years he remained in that state, living at different times in Jacksonville, Tampa and Key West. Later he moved to South Carolina, and that is his present home. During the summer of 1911 his right leg and foot began to swell, following an acute attack, accompanied by pain, redness and fever. In the winter months the condition improved, but each summer the swelling, pain and fever returned. The leg has steadily increased in size until it seriously interferes with his occupation. Locomotion is difficult and wearing of ordinary trousers impossible.

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* Read by invitation before the Medical Association of the State of Alabama, April 23, 1914.

[1] Matas, Rudolph: The Surgical Treatment of Elephantiasis and Elephantoid States Dependent on Chronic Obstruction of the Lymphatic and Venous Channels, Am. Jour. Trop. Dis. and Prev. Med., 1913, i, No. 1.

Examination.—This disclosed a typical Barbados leg. The enlargement was confined to the right leg and foot and did not extend above the knee. The circumference at the calf was 22 inches, above the ankle 18 inches and of the foot 14 inches. The skin was exceedingly hard, thick and rough; in some portions it was scaly, in others horny; at the bend of the ankle there was a wide fold, which prevented proper motion of the joint. There could be no difficulty in making a diagnosis of elephantiasis (Fig. 1).

Detailed investigation elicited the following: The Wassermann reaction was negative; repeated study of the blood, taken at various hours of night and day, and continued over several weeks, showed no filariae; at one time a decided eosinophilia (11.2 per cent.) was present; the urine was normal. The eosinophilia was most probably due to an accompanying hookworm infection, as the eggs were found in the feces.

Operation and Result.—In the management of the case the patient was first assured that the sacrifice of his limb must be the last resort. After going over carefully all the procedures proposed for the relief of elephantiasis, it was decided to do the Kondoleon operation. For four days previous the man was put to bed; each day the leg and foot were scrubbed in a strong mercuric chlorid solution, bandaged tightly with a Canton-flannel roller and kept elevated on pillows. As a result of this, the leg was reduced in size about 2 inches. Jan. 3, 1914, the operation was performed as follows: A long incision was made through the skin on each side of the leg, extending from knee to ankle. Wide retraction of the integument was secured by dissecting it back freely from each edge of the incision. Going from above downward, the deep fascia to the width of three fingers was dissected off the muscles and cut away in one piece of the length of the wound. Also, the same area of subcutaneous tissue was removed by splitting it off the skin. The muscles were laid bare and free hemorrhage occurred, requiring many ligatures. The skin was stitched back in position, dressings applied and the leg bandaged without a splint.

One week later the first dressing revealed primary union, except at the lower third of the incision on the outer side of the leg, where sloughing of the skin edges had occurred. Undoubtedly too much of the subcutaneous tissue had been removed, leaving the skin at that point thin and poorly nourished. The whole leg was very much smaller (17 inches at the calf) and the ridge across the ankle had disappeared (Fig. 2). One month afterward further progress was evident: the leg had diminished in size, the foot was much more flat and the patient could walk with comparative ease. Feb. 12, 1914, he was exhibited to the Wake County Medical Society. At the present time (April 23, 1914) the improvement is still evident; there has been no going back. The patient is able to get about and will probably take up his work in a short while.

The auxiliary treatment consisted, first, in the hypodermic administration of thiosinamin (fibrolysin) every three days, over a period of two weeks while the patient was in bed. On two occasions a marked reaction resulted from an ordinary dose and it had to be given in smaller quantities. Then, on April 10, an intravenous injection of salvarsan was given empirically, for the purpose of combating the possible parasitic or microbic origin of the disease, in spite of our inability to demonstrate the presence of any infective organism. Since the injection the eosinophils have reduced to 6 per cent. It is too early to predict the final result.

Comments on this case will naturally include some account of recent advances in the study of the etiology and pathology of elephantiasis. First and foremost it may be asserted that we have not yet arrived at the point of knowing the true nature of the disease. Of one important fact, however, we are quite sure — that not all cases are due to the *Filaria sanguinis hominis*, as was formerly taught. "It will be opportune to note the fact," says Matas,[1] "that the filarial or strictly tropical type of elephantiasis is practically unknown in Louisiana or on the Mexican Gulf Coast and in the South Atlantic States." And again, "The human filaria is very rare and, as a rule, imported from the West Indies and Central American countries. Even in these tropical latitudes, where elephantiasis is common (Barbados leg), its association with filariasis is not as frequent as one would suppose." It is barely possible that even with the utmost care one might fail to find the filariae, either because the exact time of their appearance in the circulating blood had not been determined, or because of a possible permanent clumping of the organisms in the lymphatics.

In the non-parasitic type of elephantiasis a number of causes are operative — traumatism, syphilis, phlebitis, skin-diseases, etc. Chief interest is now being given to the view that the majority, if not all, of this group of cases result from infection with a streptococcus similar to or identical with that of erysipelas, and that the clinical histories will bear this out. Even in the parasitic varieties Manson, the discoverer of the filarial origin of the disease, has been quoted as saying that "a secondary microbial infection of the obstructed area is necessary to cause the tissue changes of elephantiasis." The story of my case seems to give credence to the erysipelas theory and will serve to keep before us the suggestion of Matas to administer "a systematic course of treatment with polyvalent antistreptococcic serum to be injected in doses of 10 c.c. at least three times weeky." For the present, I shall wait for whatever effect the salvarsan may have and then decide on what further course to pursue.

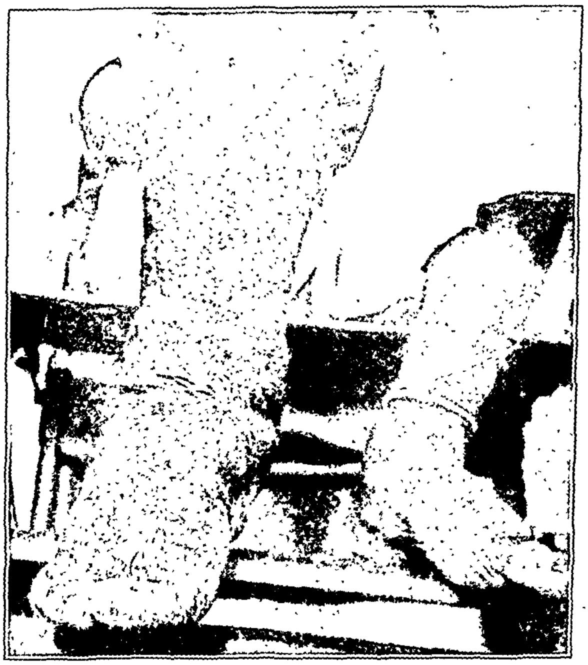
Fig. 2.—One week after operation.

It will not be necessary or expedient to rehearse the many procedures which have been employed from time to time in the alleviation of elephantiasis. Suffice it to say that no method or combination of methods has yet proved to be absolutely curative. Kondoleon's plan, with which we are here concerned, was evolved from the idea of Lanz of Amsterdam, who referred to his procedure as a "deep lymphatic derivation." But Lanz's operation is technically difficult, while the method offered by Kondoleon is simple. The principle involved is that, by removal of the deep fascia, there is brought about an anastomosis between the deep and the superficial lymph-spaces. The operation is new and has not been performed in a sufficient number of cases to warrant any definite opinion; Kondoleon himself has done it but six times, and, though his reports were favorable, only two months had elapsed since the last operation. I can say, however, that the method appeals to me as rational and that, so far, the result in this one case is satisfactory.

At this writing, more than three months after the operation, the measurements of the affected leg are: calf 15¼ inches, above the ankle 15½ inches and foot 13¼ inches. The sound leg shows the following: calf 15½ inches, above ankle 10½ inches and foot 10½ inches. It will be noticed that very little decrease has been secured in the size of the elephantiac foot, and I would propose a similar operation in that region as the next step, provided it could be done without damage to the tendons. The skin over the whole leg is much smoother and quite movable over the underlying tissues.

TRAUMATIC DETACHMENT OF THE BLADDER FROM SYMPHYSIS PUBIS WITH COMPLETE SEVERANCE OF URETHRA

USE OF THE LABIA MINORA AS A SUBSTITUTE FOR NECROSED ANTERIOR VAGINAL WALL

AXEL WERELIUS, M.D.
CHICAGO

Pressure necrosis of the anterior vaginal wall, due to prolonged and difficult instrumental labor, is not a very frequent complication, especially to the extent in which it occurred in the case reported below, in which the urethra had completely disappeared and the bladder was entirely detached from the symphysis, suspended only by the ureters and the peritoneum covering its posterior surface.

The literature on the subject of the traumatic separation of the bladder from the symphysis is somewhat meager, and this case seems to be the first reported as occurring from labor.

Ludolf Süssenguth[1] reports a case observed about the same time as mine. He states that he found only three other cases in the literature, those of Bartels, Grossich and Stierlin.

These cases were all produced by a sudden trauma. Whether the condition in my case was brought about by sloughing, following a prolonged and excessive pressure on the parts involved, or suddenly produced by the organ being torn loose during a difficult instrumental delivery, I am unable to determine, as I saw the case at first five months after the confinement, and in the interval the patient had never been examined. The severance of the urethra, however, took place at once, as incontinence of urine followed immediately after the labor.

Stierlin[2] endeavors to explain the mechanism of the injury to his patient, a young man who had the pelvis compressed between two wagons, by contending that there was a momentary dislocation of the symphysis, the two pubic rami overriding each other, thus tearing the bladder loose.

In Süssenguth's case the most careful post-mortem exploration failed to reveal any injury to the symphysis or any of the surrounding bony structures. He reasons that the partly filled bladder extending somewhat above the pubis was forcibly pushed backward; its connections to the symphysis, being unequal to the strain, gave way, at the same time tearing the urethra.

Stolper,[3] fortified by extensive researches on injuries in this region, believes that outside of a diastasis, isolated luxation of the symphysis could hardly occur. This somewhat antagonizes the theory of Stierlin, favoring the simpler explanation of Süssenguth.

Aside from the unusual pathology, my case might be of some interest from the mode of vaginal repair. After having twice vainly endeavored to close the gap left by the necrosed anterior vaginal wall, by using the remnants of this wall and nearby structures, I used the labia minora as a substitute for the absent vaginal tissue.

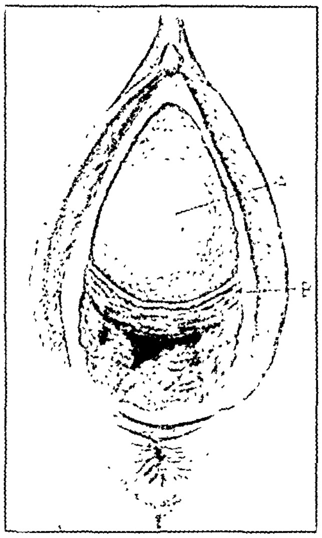

Fig. 1.—*A*, dislocated bladder; *B*, edge of necrosed vagina.

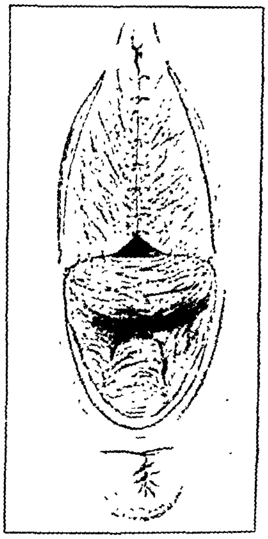

Fig. 2.—Labia minora as substitute for necrosed anterior vaginal wall (semidiagrammatic).

REPORT OF CASE

History.—The patient, a woman aged 32, was admitted to South Shore Hospital, March 5, 1913. Following a very tedious and difficult labor terminated instrumentally Oct. 7, 1912, the patient has been unable to hold her urine. For weeks subsequent to the confinement there was a foul vaginal discharge, followed later by a profuse leukorrhea, lately, at times mixed with blood. The patient also complains of pains in the pelvis, radiating down the limbs and into the back, aggravated by exertion. The appetite has lately been very poor. The bowels are greatly constipated. She is becoming more and more nervous and irritable and has lost in weight and feels very weak. The past history and family history are negative. The patient's habits are good. Menstruation is greatly lessened but regular.

Examination.—The general appearance is that of a poorly nourished young woman. Head, neck, chest and extremities are negative. The lower abdomen is somewhat tender on palpation. Vaginal examination reveals an almost complete absence of the anterior vaginal wall. On increased abdominal pressure the bladder protrudes far out of the vagina (Fig. 1); the bladder wall seems highly congested and bleeds easily. There are no signs of any urethra. The bladder seems to be suspended only from the ureters and its posterior peritoneal covering. The under surface of the symphysis is palpable. Blood examination reveals: erythrocytes 3,400,000; leukocytes 8,200; hemoglobin 65 per cent. The urine contains a large amount of albumin, but no casts.

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[1] Süssenguth, Ludolf: Deutsch. Ztschr. f. Chir., cxix, 490.

[2] Stierlin: Beitr. z. klin. Chir., lxv, 616.

[3] Stolper: Deutsch. Ztschr. f. Chir., lxxvii, 498.

Operation and Result.—Three attempts were made to close the defect. The first operation was done March 10. The edges of the remains of the vaginal wall were freshened and undercut, and brought together anteroposteriorly with chromicized catgut and an opening left for the escape of the urine. Two weeks later the condition was about the same as before operation. April 14 I operated again. The edges were freshened and undermined as before but united laterally with strong silk. These silk threads formed nuclei for calcareous deposits which in a few weeks almost cemented the entire vagina, causing considerable pain and discomfort. The last operation was performed May 5. The bladder was found to be held up fairly well from perivesical adhesions. The edges of the labia minora were freshened and incised along the outer and upper borders and dislocated inward over the vaginal defect and sutured with chromicized catgut as in Figure 2.

On reexamination, September 12, the patient had gained over 20 pounds. The pain had disappeared. The flaps partly held. Feb. 2, 1914, the local findings were about the same. There was no pain. The general condition was good.

1230 East Sixty-Third Street.

A CASE OF ACUTE NICOTIN POISONING OF PECULIAR ORIGIN

Harry S. Reynolds, M.D., New Haven, Conn.

The following case seems worthy of brief mention not only because of the rarity of occurrence of severe acute nicotin poisoning, but particularly owing to the peculiar circumstances of its origin.

At about 10:30 a. m., April 14, 1914, Rudolph D., a well-nourished infant aged 5 months, was brought into my office *in extremis* by its mother, a Slav woman, who stated that the baby had swallowed some tobacco.

On careful questioning I elicited the following history from the mother: The patient was a bottle-fed infant, and on the preceding night, according to her usual custom, the mother had prepared a mixture of milk and water which she left in a basin on either a stove or a table in the kitchen. The patient, who had apparently been in excellent health, was fed some of this mixture at 1 a. m. and again at 4 a. m. At 5 a. m. the mother discovered some tobacco in the bottle nipple, and on investigation found some more tobacco (quantity indefinite) in the milk basin, on which she threw out this milk mixture and made up a new one, which was fed to the baby at 6 a. m. Shortly afterward she went out to work, leaving the infant in the care of his father. A little later the patient began to show signs of distress and vomited twice. The mother was summoned and later sought medical aid as above stated. On the preceding evening the father had entertained some friends at his home and apparently, as all hands were smoking, some one in the party had carelessly spilled or discarded the tobacco which was found in the basin.

The patient, when first seen by me, was cyanotic and in a state of collapse. His head was sweating profusely and his extremities were cold and clammy to the touch. There was some twitching of the muscles of the face. Both pupils were widely dilated. The pulse was weak and irregular, the circulation having a pronounced tendency to fail, but responded temporarily to stimulation. Respiration was slow and labored and marked by a loud inspiratory gasp; breathing at times became so slow that artificial respiration was resorted to on several occasions.

Atropin, strychnin, brandy, epinephrin, coffee enemas, external heat and gastric lavage were administered and early in the afternoon he was apparently much improved, but at 3:30 p. m., at a time when his condition seemed quite favorable, respirations suddenly ceased entirely and on immediate investigation the heart was found to have ceased beating.

The post-mortem appearance was remarkable, the skin becoming almost immediately covered with purple blotches, which varied from the size of a ten-cent piece to that of a half dollar—an appearance which was interpreted as indicating the results of a condition of extreme vasomotor disturbance.

As the father's company left the house at midnight, the inference would seem to be that the tobacco found its way into the milk and water mixture before the 1 o'clock feeding, nicotin having then begun to extract out, and that at the 4 o'clock feeding the infant received the maximum dose of nicotin extract.

321 Grand Avenue.

DEAF-MUTISM (LABYRINTHINE DEAFNESS) AS A RESULT OF PURPURA HEMORRHAGICA*

G. W. Stimson, M.D., Pittsburgh

J. D., girl, aged 4, white, American, was referred to me, Jan. 7, 1914, by Dr. R. H. Boggs of this city, the patient coming from Maryland. The complaint was deaf-mutism. The family history of the little girl was good. She was accompanied to my office by her father and mother, both of whom were healthy. The patient had been a perfectly healthy child, normal in every respect, until she reached the age of 23 months. She heard sounds readily, started at noises and responded as intelligently as any child of her age to questions and speech directed to her by her parents. She had acquired quite a vocabulary so that her speech was well advanced for a child of her age. She could repeat anything she was told. There was never the slightest question of her intelligence or her ability to hear as well as any one.

When she was 23 months old she was seized with an attack of purpura hemorrhagica. Her parents state that within a day or two after the onset "she went stone deaf and has remained so ever since."

She is a bright, intelligent-looking little girl, apparently normal in every way except as indicated.

Examination of the nose and throat showed nothing abnormal. The external ears, auditory canals and tympanic membranes were normal in every respect. As the child seemed frightened and was examined with considerable difficulty, no tests were made of the irritability of the labyrinths to stimuli, as demonstrated by use of the caloric test, the turning test or galvanism.

The child's deafness is absolute. Her attention is not attracted by any sounds or noise however loud. Tuning-forks placed on vertex and mastoid processes produced no perceptible change of expression. She has progressively lost her power of speech until now she retains only one or two words, chiefly an almost unintelligible "ma-ma."

The diagnosis seems to be obviously that of labyrinthine deafness due to severe hemorrhage into both labyrinths at the time of the attack of purpura hemorrhagica. The hemorrhage was probably of such extent that complete disorganization of the parts took place from pressure, and a return to the normal condition became impossible even though the effused blood was subsequently absorbed.

As practically all children who acquire deafness under 7 years of age, and invariably a child as young as this one, promptly forget the few words they have learned, the loss of the sense of hearing inevitably leads to the development of mutism as well, as it has done in this case.

In none of the text-books on diseases of the ear at hand is any reference made to purpura hemorrhagica as an etiologic factor in the production of acquired deaf-mutism or labyrinthine deafness.

Jenkins Arcade Building.

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* Reported before the Allegheny County Medical Society, April 21, 1914.

A SATISFACTORY LOCAL ANESTHESIA FOR THE SUBMUCOUS RESECTION OF NASAL SEPTUM

James Joseph King, A.B., M.D., New York
Attending Laryngologist to the Hospital for Ruptured and Crippled

Realizing the difficulties encountered by many in securing a satisfactory local anesthesia for the submucous resection of the nasal septum, I offer to the profession this method, which has been very satisfactory to me in over four hundred resections. Some years ago I was not entirely satisfied with any of the methods I had seen used and I began to try out various methods in the hope of securing a technic that would eliminate the objectionable features of all methods, which are fright, nervousness, toxicity from cocain and epinephrin solution, shock, hemorrhage obscuring the operative field and the sequelae of severe headaches and toothache as the effect of the cocain wears off.

The several elements in my anesthesia are not original, but as far as I am aware the whole technic is original and is given below.

Half an hour before I begin to produce the local anesthesia the patient receives by mouth 1/150 grain scopolamin hydromid. This drug allays the patient's fears, overcomes any nervousness and is the therapeutic antagonist to cocain. It is used extensively by neurologists in the treatment of the insane and very nervous patients.

Half an hour after the patient has taken the scopolamin, I apply with a cotton wound applicator to every portion of the mucous membrane of the septum a 20 per cent. solution of cocain hydrochlorid, first painting very gently over every portion of the septum on the right side and then on the left side. Immediately after the first application over both sides of the septum I repeat the application as before. This makes two complete applications of a 20 per cent. solution of cocain to each of the septal mucous membranes. For each application I use a fresh cotton wound applicator moistened with the 20 per cent. cocain solution.

These two applications of 20 per cent. cocain solution are followed immediately by a similar application to every portion of the septal mucous membrane of a solution of 1:1,000 epinephrin solution. I then inject under the septal perichondrium and periosteum on each side from 8 to 10 c.c. of a sterile normal salt solution to which 5 minims of 1:1,000 epinephrin solution has been added immediately before injection. This injection completes the anesthesia, infiltrates every portion of the septal membrane, blocks off the nerves preventing shock and renders the operation practically bloodless. It also aids very materially in elevating the perichondrium from the cartilage so that the dissection of the mucous membrane and perichondrium is quite easy.

I use only 5 minims of epinephrin solution in the injection because this amount does not exceed the physiologic dose by hypodermatic injection, and experience has proved to me that this amount will render the field bloodless without producing toxic symptoms.

40 East Forty-First Street.

The Cost of Pasteurizing Milk.—In Bulletin 85 of the Department of Agriculture it is estimated that the cost of pasteurizing with a properly operated plant averages for milk 0.00313 cents a gallon and for cream 0.00634 cents. Tests also show that the "flash" process, by which milk is raised to 165 F. and kept there for a moment only is more expensive than the "holder" process, by which milk is held at the temperature of from 135 to 145 F. for thirty minutes. The "holder" process has been found to require 17 per cent. less heat than the "flash" method, and there is also a saving in the expense of cooling. For hygienic reasons also, the "holder" process is to be recommended. An item of economy in the pasteurization of milk is the utilization of exhaust steam from engines and steam-driven auxiliaries. An arrangement by which the pasteurized milk is made to assist in heating up the raw milk may aid the economy of the process.

Therapeutics

SOME OVERLOOKED CAUSES OF CHRONIC ILLNESS

(*Continued from page 1638*)

CHRONIC DYSPEPSIA

Before a condition is termed dyspepsia, nervous dyspepsia, chronic gastritis, or intestinal indigestion, although any one of these conditions may be present, we should most carefully seek the cause. This large subject is referred to only to present some of the frequently overlooked causes of chronic indigestion; we should never be satisfied with any one of these diagnoses.

Frequent causes of these digestive disturbances are reflexes from eye-strain, or from the appendix, ulcer of the stomach or duodenum, reflexes from the gallbladder and a loose kidney. The frequency of these etiologic factors perhaps is in the order named. Ptosis of the abdominal organs is more or less readily determined, and need not be here considered. Also, it is not necessary to refer to the classic symptoms of any of the above-mentioned causes of indigestion, but it is urged that clinicians should never be satisfied to say that the condition is one of gastric hyperacidity, or that there is insufficiency of hydrochloric acid in the stomach, or that a patient has recurrent "bilious" attacks.

Chronic appendicitis, or, perhaps as frequently, pericolitis with adhesions around the colon in the region of the appendix, generally caused by a previous appendicitis, can give reflex pain referred to the cap of the duodenum, and can cause hyperacidity and dyspepsia, which may sooner or later cause epigastric tenderness and symptoms of disturbance in the upper abdomen. A chronic irritation of the appendix may cause only gastric flatulence. Sometimes the region of the appendix will be found entirely insensitive, but we should make repeated abdominal examinations of a patient who has indigestion and is not benefited by the ordinary corrections of diet and simple medicinal treatment. Also, we should urge that whenever the patient has an attack of pain he should be examined at once by his physician, and very often distinct, positive trouble will be found localized near the appendix.

On the other hand, prolonged irritation in the abdomen may allow ulcer of the stomach or duodenum to develop through the irritation of the mucous membrane of the stomach and destruction of the protective mucus, which results from the protracted hyperacidity. It seems to be a fact that hyperacidity of the stomach is a preliminary stage of gastric ulcer, and likewise of ulcer of the upper part of the duodenum. One factor in the cause of ulcer of the stomach seems to be the absence of normal mucus protection, and anything which will cause the mucus coating of the stomach to become normal tends to prevent erosion. We can readily understand this when we note the irritation that occurs in a dry throat, larynx or trachea; anything that tends to increase the mucus in these regions cures the condition. We should, therefore, recognize a preulceration stage of gastric or duodenal ulcer, in which there is likely to be hyperacidity; the cause may be great debility, mistakes in eating, or a chronic appendicitis. The immediate treatment of such a condition by proper diet and improving the general condition of the patient, with the removal of an irritating factor, if such be found, may prevent ulcer.

A few suggestive points of diagnosis may not be out of place. In chronic appendicitis or pericolitis there is generally (but not always) tenderness, if not pain, referred to the appendix region, also flatulence, gastric and intestinal, and constipation. There is rarely much tenderness in the epigastric region, certainly not acute. The appetite is generally poor, the tongue coated. Taking food and liquids into the stomach does not ameliorate and may increase the discomfort, which is usually not true of ulcer of the stomach. The position of the body does not change the character of the pain, distress and irritation.

Some of the symptoms of ulcer of the stomach generally present are: pain, often relieved or aggravated by a change in position, usually relieved by eating, unless the food is irritant; irregular appetite; tenderness on palpation; constipation, hyperacidity, and red tongue, unless there is gastric retention. Vomiting and bleeding are not constant, and both may be absent. If frequent projectile vomiting is present, or blood is vomited or frequently appears in the stools, of course the diagnosis becomes more positive. Pain from ulcer of the stomach is readily soothed by bland food, and especially by milk of magnesia. This is not true of referred appendix pain or of ulcer of the duodenum, although milk of magnesia (magna magnesiae, N. F.) may stop the pain promptly in the latter condition.

In ulcer of the duodenum the pain is likely to occur three hours or more after eating, and often awakes the patient in the night. The appetite is generally good; the tongue somewhat coated; the tenderness is rather distinctly localized; the bowels are irregular, sometimes loose, sometimes constipated, and the pain is more intermittent and not so constant as in ulcer of the stomach.

It is not necessary to refer to the classic signs of gall-stones or gall-bladder disturbances. The importance of examining the stomach contents, also the feces for occult blood, and taking roentgenograms after a bismuth meal need not be emphasized, but sometimes all kinds of examinations will still leave the diagnosis uncertain until the abdomen is opened.

It has lately been urged that in the diagnosis of gastro-intestinal disturbances we have not given sufficient importance to the determination of indican in the urine. It is asserted that all anatomic lesions of the gastro-intestinal tract will show continued indicanuria. On the other hand, a functional indicanuria may be prevented by free catharsis and regulation of the diet, and especially by several washings of the colon. If indican is repeatedly present after good catharsis and several days of a simple diet, some lesion in the abdomen should be strongly suspected.

FLOATING KIDNEY

The symptoms caused by a loose kidney vary from none to those of serious indigestion, and those produced by pressure in different parts of the abdomen or caused by the kidney dragging on its ligaments. A properly fitting abdominal bandage, with or without a kidney pad, may entirely remove all signs of trouble, and such a bandage may really be a properly made corset, as the majority of loose kidneys occur in women.

As the right kidney is most frequently the one that is loose, the symptoms sometimes simulate gall-bladder disturbance or appendicitis, and a wrong diagnosis of the condition is often made.

Because a patient has a loose kidney, operative procedures to replace it are not necessarily indicated. On the other hand, such an operation not infrequently becomes the only means of curing the reflexes caused by such a kidney or the colics and dangers resulting from the twisting of the kidney on its pedicle.

This condition is referred to because such a kidney is so elusive and a diagnosis of this cause of the abdominal disturbance is often very difficult to make. An abdomen may be repeatedly examined and a loose kidney not discovered, while at a subsequent examination a kidney that can be depressed to the brim of the pelvis may be found.

The amount of gas in the intestine at various times may determine whether the kidney will stay in place or whether it will drop to the length that its loose ligaments allow. It is a fact, however, that without making an examination when the patient is standing, another when the patient is lying down and another after the patient has taken some rapid, deep breaths or has done some jumping (and even then there must at times be repeated examinations), it cannot positively be determined that a kidney is not loose and is not a cause of the abdominal symptoms.

PLEURISY

Pleurisy with effusion is perhaps often overlooked. Those who examine patients for entrance to tuberculosis sanatoriums understand this fact more fully than those who are not called on to note the previous history of many cases of pulmonary tuberculosis. The inflammation may be so insidious that a physician is not called before the effusion is present. The effusion may not be large, and the transmission of the voice and respiratory sounds may be so distinct that the condition is supposed to be that of a consolidated lung. Or, if on the right side, and the effusion is small, the liver may be thought to be enlarged. On the left side the condition may be taken to be an enlarged spleen. The mistaken diagnosis is serious, because pleurisy with effusion is so generally tuberculous in origin, and if adhesions are formed when the fluid remains in the pleural cavity the lung will never again expand to its proper size, and tuberculosis of the lungs readily begins. It is suggested in such cases that a long hypodermic or exploratory needle, or an aspirating needle be inserted. The simplest kind of aseptic technic will preclude any harm; and many times, in doubtful cases, we cannot make a diagnosis of the condition without such a practical test.

CERVICAL OR FALSE RIB

Some recurrent neck, shoulder and arm neuralgias, which are benefited only to recur again, may be due to this condition. Careful examination of the neck and roentgenograms may show that such a rib is pressing on a nerve trunk. Such a bone growth may also cause either disturbance in the subclavian artery, or muscle pains or contractions in the neck. Such possible causes of disturbances in the neck and shoulder region should not be forgotten. They are said to be more frequent in women than in men, and when present are bilateral in about 70 per cent. of the cases. The growth generally occurs from the transverse process of the sixth or seventh cervical vertebra.

(*To be continued*)

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SATURDAY, MAY 30, 1914

SOME NEWER ASPECTS OF ACIDOSIS

The modern physicochemical study of the blood has clearly shown that the reaction of this fluid undergoes comparatively little, if any, change even under conditions approaching extreme acidosis. From this point of view the blood and tissue fluids maintain an unvarying alkaline reaction or neutrality. These terms may be used interchangeably for an alkalinity which is actually so slight.

The foregoing statements, which are everywhere accepted in scientific circles, have been the occasion for not a little confusion in the minds of those who were trained in the older school of chemistry and have not fully succeeded in grasping the importance of modern physicochemical conceptions. The physical chemist measures the reaction of a fluid by the balance between the hydrogen and hydroxyl ions which it contains. Examined by this standard, the blood has an extremely low concentration of hydroxyl ions; indeed, it is scarcely more alkaline than distilled water. It is this low hydroxyl ion concentration which varies so slightly even under extreme pathologic conditions. On the other hand, there is an excess of replaceable bases over acids in the blood; and the reaction of this fluid was formerly expressed in terms of its behavior toward indicators and its ability to neutralize acids. In this sense the blood is definitely alkaline toward the majority of indicators, and it has therefore commonly been spoken of as an alkaline fluid. This behavior of the blood with indicators toward acids and bases has been termed its "titratable alkalinity," in contrast with its hydrogen ion concentration, or reaction in the physicochemical sense.

With the advent of the newer ideas and the demonstration of admirable regulatory functions by which the physicochemical reaction of the blood was maintained unchanged despite great variations in the contribution or abstraction of acid and basic radicals, doubt began to be expressed regarding the validity of the older ideas and procedures. It was suggested that the "titration" of the blood must be abandoned as a method of study, and that, primarily, in the urine is shown the result of the prompt adjustment occurring in acidosis. For, obviously, if in this excretion the proportion of acids and alkalies formed in metabolism or otherwise introduced is such as to maintain a constant neutrality in the organism, this excretion would seem to offer the best opportunity for the detection of changed relations.

Dr. Sellards[1] of the Johns Hopkins Hospital has come to the rescue of the older scheme of estimating titratable alkalinity in the blood and has shown the value which this procedure may have from a clinical point of view. The outcome of his studies shows that changes occur which give rise to distinct qualitative differences in the reaction of normal and pathologic serums to phenolphthalein. Conditions are readily obtained under which blood-serum, during an acidosis, is neutral or acid, whereas under the same conditions all normal serums are strongly alkaline. Definite changes in the titratable alkalinity occur in experimental and spontaneous acidosis, in certain nephropathies, and in some anemias. The method also affords information of value in the differentiation of certain obscure comas. Cases of diabetes occur in which the excretion of ammonia and of acetone and related bodies is normal, but the titratable alkalinity of the blood is decreased and the tolerance to bases is increased. This affords proof of a definite impoverishment in bases in these cases.

The titratable alkalinity is of important biologic significance, while the available evidence indicates that the physicochemical reaction of the blood is maintained at a fairly constant value, even in outspoken grades of acidosis. The parallelism between the diminution in titratable alkalinity and the increase in tolerance to fixed bases in diabetes and in the nephropathies affords crucial evidence that the increase in tolerance is practically due altogether to a deficit in the body alkalies or alkali-yielding substances.

THE GROWTH AND COLOR CHANGES OF HAIR

The attempt to find an illuminating account of the factors which may modify or determine the growth of hair will usually be a vain one. The older writers, who did not always hesitate to make dogmatic statements when they were required to produce a finished account, sometimes discussed the subject with considerable freedom. Not so the modern scientific author, who realizes that every sentence from his pen is likely to be subjected to the scrutiny and criticism of some one who has studied the topic at first hand. The general descriptions of the processes of growth have been satisfactory with respect to their histology. The hair follicle and its papilla, the proliferation of the cells on its surface, the development of keratin — all of the facts concerning these processes are permanent acquisitions of physiology, but they do not commonly rise to the level of practical problems. Why does or does not the hair grow in certain regions in certain individuals? What are the conditions contributory to growth? How are the natural changes in color brought about and what determines them? The physician is frequently asked such questions as these, and for a convincing answer to them he will search with little success.

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[1] Sellards, A. W.: A Clinical Method for Studying Titratable Alkalinity of the Blood and Its Application to Acidosis, Johns Hopkins Hosp. Bull., 1914, xxv, 101.

Experimental studies in this field cannot readily be conducted on man. Certain facts are, of course, matters of common observation. The beard grows anew after shaving, and this tonsorial practice is believed to stimulate the growth of the hair. Precisely why it does, is not clear; though the stimulus which shaving applies to the skin is said to produce a reaction favorable to improved local circulation and nutrition of the areas involved. For the same reason, that is, increased cutaneous activity as shown by the sweat-glands and neighboring structures, the beard is said to grow more rapidly in summer.

Surgeons sometimes observe an unexpectedly intensive growth of the hairs in the immediate vicinity of suppurating wounds or in parts exposed to hot-air treatment. This may be interpreted as the outcome of the unusual hyperemia of the regions involved. Evidence of the probable accuracy of this view has been offered by the Greifswald surgeon, Georg Schöne,[1] in experiments with white mice. When pieces of the hair-covered skin were removed from the region of the back and again transplanted thereon, many of the hair follicles were noticed to atrophy at first; but presently an abnormally rapid and intense growth of hair ensued. This was especially conspicuous at the edges of the wounds. The active metabolism in the region of the healing and regenerating tissues is assumed to account for the result.

If the pigment which produces the natural color of the hair is lacking, the hairs present a gray or white appearance. The silvery color may further be due to the presence of more or less air in the hair. To account for the blanching of the hair — the familiar accompaniment of old age and a phenomenon which frequently begins long before middle life is fairly concluded—various views have been set forth at different times. The silvery gray appearance which is seen in aging persons is doubtless characterized to some extent by the occurrence of larger numbers of air cavities, and not by the destruction of the pigment as has frequently been postulated. For the hair pigment is among the most resistant of organic substances and can be destroyed only by the most vigorous chemical treatment. Destruction of the pigment—in distinction from the artificial coloring or staining of the pigment — is scarcely conceivable without decomposition of the hair itself. Dry hairs contain more air and therefore will appear somewhat lighter in color than moist ones; but black hair may be dried to the utmost without becoming white, and the hairs of mummies dried through the centuries still show their pigment precisely as do fresh hairs.

Some years ago Metchnikoff of the Pasteur Institute in Paris propounded a different theory of the mechanism by which black hair turns white.[2] According to him, the hairs are invaded at certain times by special phagocytic cells. These "chromophages" find their way to the pigment, which they engulf and carry with them in their exit from the hair. This view has, however, never been seriously accepted by those who have made first-hand studies of the subject.[3]

The true explanation of the familiar color-changes of the hair is probably to be found, not in a destruction of pigment already present, not in any bleaching of hairs already formed, but rather in a complete renewal of the hair. Pigmented hairs fall out and are replaced by unpigmented or white ones. The appearance of gray or white hair is therefore attributable to the formation of a new hair coat rather than by the alteration of the old one. Completed pigmented hairs never turn gray; they fall out. It is nevertheless observed that the process of pigment formation may cease during the development of a hair. In that event the tip will remain pigmented though the base appears white.

How are we to harmonize these statements, it may be asked, with the many published records of hair having turned white suddenly as the presumable consequence of fright or other profound emotion? A careful study of the reputed instances has invariably shown that they were mythical.[4] It is popularly related that Marie Antoinette grew gray during the night after she was condemned to be executed. It is true that at her death her hair was gray; but her biographers all record that her hair had been gray long before the time of her death. This may serve to illustrate the value of hearsay evidence and popular tradition.

The conspicuous changes which the color of the fur of certain species of animals undergoes at different seasons of the year, becoming white in the winter months, affords an opportunity of investigating this pronounced transformation seemingly so closely related to what is seen in advancing age in man. The studies of Schwalbe[5] have demonstrated that here too there is no alteration of the color of the summer fur. The dark hairs fall out as the season advances and white hairs grow in their place. No sudden mutations are found when accurate observations are instituted.

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1. Schöne, G.: Beobachtungen über das Wachstum der Haare, Die Naturwissenschaften, 1914, ii, 388.

2. Metchnikoff, E.: Etude sur la vieillesse, I. Sur le blanchissement des cheveux et des poils, Ann. de l'Inst. Pasteur, 1901, xv, 865.

3. Stieda, L.: Untersuchungen über die Haare des Menschen, Merkel and Bonnett's Anat. Hefte, 1910, xl, 287.

4. Stieda, L.: Das Haarpigment und das Ergrauen, Wien. med. Wchnschr., March 26, 1910, p. 738; Ist plötzliches Ergrauen des Haupthaares möglich? Deutsch. med. Wchnschr., Aug. 11, 1910, p. 1484.

5. Schwalbe: Ueber den Farbenwechsel winterweisser Tiere, Ein Beitrag zur Lehre vom Haarwechsel und zur Frage nach der Herkunft des Haarpigmentes, Morphol. Arb., 1894, iii.

CARBON MONOXID AND CANARIES IN MINES

The usefulness of small animals in the detection of air vitiated by poisonous gases in mines has been well established. Their value has been attested not only in connection with possibilities of danger from this source in the ordinary processes of subterranean mining operations, but also in the rescue work which calls for the greatest of care and precaution to prevent harmful consequences to those engaged in it. Carbon monoxid, the most toxic of the mine gases, is always produced in mines in some quantity by the use of explosives in blasting. When large shots are fired, where the ventilation is poor, and the working-faces are too far ahead of the last break-through, harmful percentages of carbon monoxid and other poisonous gases may be encountered. Miners at some mines frequently go home sick from powder smoke. The latter has been reported to contain as high as 4 per cent. of carbon monoxid and the products of the explosion of guncotton are reputed to contain many times this proportion.[1] Carbon monoxid is the constituent of after-damp most insidious in its action, most difficult to detect, and responsible for most of the deaths caused by mine explosions. For these reasons it becomes highly desirable to have a practical and sensitive indicator of quantities of carbon monoxid which may be in even the slightest degree harmful to man.

The United States Bureau of Mines has of late undertaken an elaborate investigation to determine the relative usefulness or unsuitability of various readily available animals.[2] The problem here involved is not a new one. Small animals have been employed practically in connection with mine operations in England and presumably on the Continent also, for some time. The bureau has found canaries and mice to be suitable for the purposes here outlined, the birds being the more sensitive of the two species. They are, furthermore, easily obtainable and become pets of the men who have them. One of the new questions to be tested was whether canaries can be used repeatedly in exploration work without becoming less useful as indicators of carbon monoxid; that is, whether they become more or less susceptible to the poison after several or many exposures. Furthermore, it has been desirable to compare the relative behavior of men and small animals to carbon monoxid.

There is no complete agreement among the different investigators as to the comparative sensitiveness of canaries and men to the poisonous gas here under discussion. This need not entirely militate against the usefulness of the animals; for they undoubtedly give ample warning of percentages of carbon monoxid immediately dangerous to men. In defining the minimum harmful or poisonous concentration of the gas, Haldane states that 0.05 per cent. in pure air is just sufficient to produce in time very slight symptoms in man, and the same percentage produces very slight symptoms in mice. He states that 0.2 per cent. is very dangerous to man. According to the investigators of the Bureau of Mines, when the proportion of carbon monoxid is 0.15 per cent. canaries will show distress usually in from five to twelve minutes. With 0.2 per cent. of the gas it is apparent in from two to six minutes. With these percentages much longer time is required before distress appears in men, although in the case of some persons the effects, when they do appear, may last for hours. Men cannot stand the exposure to collapse from carbon monoxid as animals can. After distress and collapse canaries and mice recover quickly if given fresh air. In man, recovery is often a matter of days; and long-standing after-effects are by no means rare in the case of an intoxication like this which may deprive the hypersensitive nervous system of its proper oxygen supply for undue periods.

From the fact that certain individuals are able to withstand atmospheres that cause distress in other members of a group, it is sometimes concluded that some persons have an idiosyncrasy to the gas. This is always at best the explanation of last resource. It must be kept in mind that after-damp in different parts of a mine (in some places quite close together) will differ in composition to the extent—where the toxic dose is so small—that at one place an insignificant amount of carbon monoxid may be present while at another place, near by, a harmful proportion may exist. One person of a party unknowingly may encounter the latter atmosphere while his comrades do not. The quantity of the poisonous gas absorbed depends, furthermore, on the air breathed. Moderate exertion may increase the volume intake per minute to several times the normal at rest. It follows, therefore, that if certain members of an exploring party work harder than others they will become poisoned more quickly than the less active members.

It is also occasionally found that men may feel distress, especially if they work hard, in the presence of 0.1 per cent. or under of carbon monoxid, when animals at rest in their cages do not distinctly show it. Sometimes different animals of the same species appear to be affected differently by the same proportion of the gas; hence more than one should be used at a time. Fortunately, no acclimatization of canaries appears to occur under the conditions surrounding recovery work in mines, so that these birds do not become less useful or a possible source of danger. They respond promptly to alternate intoxication and resuscitation; whereas guinea-pigs, for example, appear to become somewhat immune. Those who appreciate the seriousness of such situations will realize the advantage of being able by means of animals to define the danger-zone in mines.

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[1] Kunkel, A. J.: Handbuch der Toxikologie, p. 326.

[2] Burrell, C. A., and Seibert, F. M.: Experiments with Small Animals and Carbon Monoxide, Jour. Industrial and Engineering Chem., 1914, vi, 241.

THE DEATH-RATE FOR 1913

According to a bulletin of the Bureau of the Census, the death-rate of the registration area of the United States for 1913 was 14.1 per thousand estimated population. In 1912 it was 13.9, in 1911, 14.2. For the years from 1901 to 1905 the average was 16.2; from 1906 to 1910 it was 15.1. We are therefore continuing in improvement, the average for 1911, 1912 and 1913 being 14.06. These are the exact figures as stated in the report of the census bureau. What they mean in actual lives is not indicated except by closer analysis. The decrease from 16.2, the average from 1901 to 1905, to 14.1, the average for 1913, amounts to 13 per cent., or a reduction of one death in every eight. If the same rate had prevailed in 1913 as in the period from 1901 to 1905, there would have been 1,025,446 deaths recorded instead of 890,823, an excess of 134,623.

The largest percentage of decrease was shown for Rhode Island (15.7), followed by New York (12.3), New Jersey (11.2) and Massachusetts (9.6). It seems to be only a peculiar coincidence that these leaders should all be in one small section of the entire territory discussed. Slight increases which occurred in some states (Michigan, 4.5; New Hampshire, 3, and Indiana, 0.8) are believed to be due in some cases to increased accuracy of registration. The state with the lowest death-rate is Washington, with 8.5 deaths per thousand population; and then in the following order come Minnesota, 10.4; Utah, 11.0, and Wisconsin and Colorado, 11.5. The doubtful honor of possessing the highest rates falls to New Hampshire with 17.1; North Carolina, 16.8; Maryland, 16.2; Vermont, 15.8; Maine, 15.3, and Connecticut, Massachusetts, New York and Rhode Island, 15.0. It seems that in the New England states there occurred most of the higher death-rates and most of the improvement from previous years.

It is significant that the four states in the registration area which have a colored population of over 10 per cent., Kentucky, Maryland, North Carolina and Virginia, should average 15.0, while a group with equal population but fewer colored, Wisconsin, Washington, Vermont and Minnesota, averages 11.5.

Among cities of over 100,000 population, Seattle and Spokane lead by far with death-rates of only 8.4 and 8.9, respectively. Portland, Ore., follows with a rate of 9.5, so that this particular corner of the United States by comparison would seem to be more than holding its own. It seems almost obvious that location, climate and character of population are responsible for this low rate. Minneapolis and St. Paul as usual contest for next place with 11.6 and 11, Oakland and Milwaukee following with 12.5 and 12.7. The highest rates occur in Memphis, Tenn., 20.8; Richmond, Va., 20.4; New Orleans, 19.9; Albany, N. Y., 19.8; Baltimore, 18.5; Nashville, Tenn., 17.8; Birmingham, Ala, 17.4; Atlanta, Ga., 17.4, and Washington, D. C., 17.3.

The cause of this high rate in Southern cities has probably often been mentioned and often explained, but we cannot too often point the way to betterment. In the accompanying table, the significant figures need no explanation.

	Death-Rate per 1,000 Population			Increase (+) or Decrease (—) per cent. 1913 as compared with average 1901-1905		
	Total	White	Colored	Total	White	Colored
Memphis	20.8	15.9	28.2	+ 7.2	— 3.6	+23.1
Richmond	20.4	16.7	26.8	—12.8	— 9.7	—15.5
New Orleans ...	19.9	15.6	31.9	—11.2	—18.8	+ 2.9
Baltimore	18.5	16.2	31.0	— 7.5	— 9.0	— 3.1
Nashville	17.8	14.7	24.0	—17.2	—13.5	—18.9
Birmingham	17.4	12.3	25.2	......	......	......
Atlanta	17.4	13.5	25.2	—17.5	—16.2	—14.9
Washington	17.3	14.4	24.4	—15.6	—12.7	—17.3
Average	18.68	14.9	27.08	......	......	......

The arraignment is a startling one, but when comparison is made with previous years, a basis is obtained for hope that progress now started will continue, and much is being done. It is to be noted that in only two instances did the colored rate increase. Recently a conference was held at the call of the Louisiana State Board of Health to consider betterment of hygiene among negroes.[1] Five states and the District of Columbia sent delegates. Eight of the leading negroes of the South were present. Progress has been made and sincere workers are adding impetus to the beginning steps. Another decade should see a more reasonable balance between the rates accorded to the two races.

THE STREPTOCOCCI IN MILK

Living organisms, both great and small, are usually associated with a definite habitat. Conditions of transference arise, however, whereby a species peculiar to a given locality is carried to another place. We can often identify the strangers by observing their behavior and comparing it with the deportment of other known organisms. If, perchance, the characteristics of the invaders become altered through adaptation to the new environment, it is not always easy to identify them.

The bacteria found in milk are indeed a heterogeneous collection, and the true types of milk bacteria are to be sought at the sources of contamination. The fact that certain organisms are frequently found in milk does not necessarily mean that they originate in the udder, but rather directs the search toward the focus of infection from which they find their way into the secretion of the mammary gland. It is known that while the colon group is frequently found in water and milk, its natural habitat is the intestinal tract of warm-blooded animals. The experts of the Dairy Division of the Bureau of Animal Industry in

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[1] Conference on Betterment of Hygiene among Negroes, Medical News THE JOURNAL A. M. A., May 2, 1914, p. 1410.

Washington have been investigating the sources from which the streptococci may gain entrance into milk.[1] The foremost possibilities are: contamination with feces, which must always be considered as a possible source of bacteria in milk, which would undoubtedly include members of the lactic-acid group; the presence, in the herd producing the milk, of one or more cows with infected udders; the mouth, which is known to contain streptococci. The habit of licking the flanks and udder provides a more or less direct connection between the mouth of the cow and the milk-pail.

If it can be accomplished, the hygienic significance of the identification of the bacteria in milk with the species or types constantly found in some of these different sources of contamination must be obvious. Accordingly, the government investigators collected representative cultures of streptococci from milk, bovine feces, the mouths of cows and their udders, and compared the bacteriologic characteristics of these related organisms with each other and with those isolated from milk. In view of the extreme variability of these organisms, such a comparison is anything but easy. Indeed, it was found that the morphology varied with varying conditions and could not be correlated with the source of the culture. On the basis of physiologic manifestations, however, some suggestions were forthcoming. When the milk-cultures were considered individually, it was found that with the exception of two which clearly came from feces, they could be included in one or the other of two groups into which the udder cultures were divided.

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1. Rogers, L. A., and Dahlberg, A. O.: The Origin of Some of the Streptococci Found in Milk, Jour. Agric. Research, 1914, i, 491.

Current Comment

THE BIOCHEMISTRY OF BACTERIA

Bacteria are known to resemble other organized forms of cellular protoplasm in a very general way in respect to the essential chemical compounds that enter into their make-up. It has been ascertained that they contain various proteins, nucleic acid derivatives, carbohydrates, phosphatids (lecithins) and representatives of the group of "lipoids" now designated as sterols, of which cholesterol is a familiar example. Bacteria are classified at present on the basis of their behavior in various mediums and also on their tinctorial properties as shown by the reaction with a few widely used stains. Both of these features of bacterial response are essentially chemical; and the differential staining of the micro-organisms is clearly an expression of the occurrence of some unlike chemical compounds in the bodies of the bacteria. We have hitherto referred to Tamura's demonstration that in certain strains, such as the tubercle bacillus and the *Mycobacterium lacticola,* for example, the acid-fast phenomena are associated with the presence of a characteristic substance, the higher alcohol mykol,[1] in place of the more familiar cholesterol. He has now further demonstrated other chemical differences between unlike forms of bacteria, namely, the two species already mentioned and the bacillus of diphtheria, which is biologically and morphologically quite distinct from them.[2] The diphtheria organisms are not "acid-fasts," and accordingly mykol was not found in them. They differ also from the tubercle bacilli and the *Mycobacterium lacticola* with respect to the character of the phosphatids which they yield and in the solubilities of their protein components. The amino-acid units of the latter also show variations, the proteins of the bacillus of diphtheria being, by comparison with others, rich in tyrosin and poor in phenylalanin. In all of the three species investigated, however, the Gram-staining seems to depend on the presence of lipoid substances. Such facts represent a further advance toward a comprehensive knowledge of the structural biochemistry of bacteria.

NULLIFICATION BY AMENDMENT

In spite of the fact that legislation restricting the practice of medicine to those showing adequate training and qualifications can be justified only on the ground of public good, each year, in practically every state in which the legislature meets, the medical practice act of that state is subject to attack from some source. Thus each year it is necessary for those interested in the maintenance of high educational standards to resist the assaults made on the law. One who has watched the course of legislation throughout the country for a number of years is led to wonder why a law clearly in the interest of the public must each year be defended from attack by those interested in breaking down its restrictions. In spite of the agitation against such laws under the pretext that the individual should be allowed "free choice of doctors," it is significant that the attacks on medical practice acts are always inspired and led by those who wish to treat the sick for compensation and not by those who wish the privilege of selecting some unqualified practitioner as an attendant. Another significant fact is that no matter how carefully drawn or how diligently guarded after its passage a medical practice law may be, it is eventually nullified, either partially or completely, by the passage of an amendment or the rendering of a judicial decision modifying the definitions or introducing such exemptions as will make it possible for untrained and unqualified persons to perform, under the authority of the law, the very acts which the law itself was intended to prohibit. This nullification process has occurred repeatedly in different states. No better example of it has recently been observed than the recent amendment of the Massachusetts medical practice act, which resulted in the adoption of the following amendment: "Nothing in this act shall be held to apply to registered pharmacists, registered

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1. Some Features of Staining Technic, editorial THE JOURNAL A. M. A., Nov. 8, 1913, p. 1724.
2. Tamura, S.: Zur Chemie der Bakterien, III Mitteilung, Ueber die chemische Zusammensetzung der Diphtheriebacillen, Ztschr. f. physiol. Chem., 1914, lxxxix, 289.

dentists or registered optometrists, or to restrain the practice of clairvoyance, hypnotism or mind cure, or to apply to any person who administers to or treats the sick or the suffering by mental or spiritual means without the use of drugs or material remedies." Evidently the belief in Massachusetts in spirits, ghosts and similar superstitions has persisted even since Cotton Mather's day. The legalization by the Massachusetts legislature of the fortune-telling clairvoyants who are being put out of business as swindlers by the police in many of our states is a sad commentary on legislative conditions in a state which was once regarded as the intellectual leader of the nation. Another amendment to the bill defined the practice of medicine so as to restrict it very largely to those claiming to be scientifically educated and qualified physicians. That is, the Massachusetts law has gradually been modified by amendment from a restrictive measure into a definitive law, in which the illegal act consists, not in treating disease without proper qualifications and authority, but in claiming to be what one is not, namely, a legally qualified medical practitioner. Such a definitive law, as has been repeatedly pointed out in THE JOURNAL, has its advantages. It must be clearly recognized by physicians and others interested, however, that a purely definitive law is not restrictive and never can be. The amendment of the Massachusetts act furnishes another interesting chapter in the history of our complicated, contradictory and generally ineffective methods of regulating the practice of medicine by law.

POSSIBLE SOURCES OF ACIDOSIS IN INFANCY

A condition of acidosis in the diseases of early infancy is familiar to the modern pediatrist. It may be relative acidosis due to a deficiency in the supply of alkali at a period when bases are particularly needed to meet the requirements of a growing organism; or the acidosis may be a positive rather than a relative phenomenon and be attributable to a production of undue amounts of acid products which for some reason escape further oxidation or destruction in the economy. In the event of the existence of the latter condition one must call to mind, first of all, those examples of acid compounds that are known to arise under such circumstances. Most familiar are the lower members of the fatty acid series, such as the volatile formic, acetic and butyric acids. We would not imply that these are all uniformly non-metabolizable in the body, for acetic acid and its salts are as a rule readily oxidized. Formic acid, once making its appearance, is not so readily destroyed. To account for the possible origin of such compounds would not be difficult, inasmuch as they frequently represent products of the activity of micro-organisms in the gastro-intestinal canal, which is notably liable to excessive bacterial invasion in the disorders of infancy. So far as these substances escape oxidation they are excreted in the urine. Aron and Franz[1] have examined the urine of numerous sucklings in the Children's Clinic at the University of Breslau, without finding more than merest traces of volatile fatty acids therein. The quantity was not increased by an enrichment of the diet in fats; and even in acute disturbances of nutrition, in dyspepsias and alimentary intoxications, as an accompaniment of which they might have been expected to arise, the results were negative. Another organic acid resistant to metabolic destruction is oxalic acid. It has been realized for some time that this arises as a product of the fermentative decomposition of carbohydrates; and such a mode of origin has been postulated for those cases in which oxaluria could not be explained as the result of the ingestion of food (as rhubarb, spinach, etc.) said to contain considerable preformed oxalic acid.[2] According to Aron and Franz, the urine of infants brought up on such oxalate-free foods as milk and milk mixtures almost invariably contains oxalic acid. This is assumed to have either a fermentative origin in the alimentary canal, or an endogenous one in intermediary metabolism. Additions of cane-sugar or other nutrient carbohydrates to the diet seem to augment somewhat the urinary output of oxalic acid. No increase could be associated, however, with acute nutritive disturbances. The facts, negative and positive, here recorded point to a field for investigation that may yield fruitful suggestion with respect to the etiology of some of the obscure acidoses.

NEW HOUSES AND HEALTH

New houses are constantly offered for rent in large numbers in the United States and real-estate agents are naturally desirous to fill the houses on their lists with tenants as soon as possible. Probably a little investigation would show the desirability in this country of requiring a certificate that a new house will not endanger the health of its occupants before families are allowed to move into it. Such municipal regulations are proving valuable in England. Toward the close of 1912 the Portsmouth (England) corporation decided that thereafter no new building intended for human habitation in that borough should be occupied until it had been certified as sanitary in every respect. Dr. A. Mearns Fraser[3] says: "The principal evil that it will prevent is the occupation of houses before they have had time to dry." He adds: "I would far sooner live in a house with defective drainage than in a damp house; the results from the latter are more insidious in their onset and more difficult to overcome. Dampness undoubtedly greatly favors the incidence of consumption, bronchitis, rheumatism, heart-disease and diphtheria. Probably children are more susceptible to the ill effects of damp houses than adults." The departments of health of our cities might well take up this question. Probably most American municipalities already have the legal power necessary to require such certificates and the question is only one of making the regulation and establishing the custom.

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[1] Aron, H., and Franz, Marianne: Organische Sauren im Säuglingsharn, Monatsschr. f. Kinderh., 1914, xii, 645.

[2] Baldwin, Helen: Jour. Exper. Med., 1900, v, 27.

[3] Fraser, A. Mearns: Medical Officer, Feb. 7, 1914.

Medical News

ARKANSAS

Colored Physicians Society Holds Meeting.—The State Association of Negro Physicians held its annual meeting in Little Rock, May 6 and 7, and elected the following officers: president, Dr. Steven W. Harrison, Fort Smith; vice-presidents, Drs. Madison M. McBeth, Plum Bayou; Harold H. Phipps, Hot Springs, and J. E. Swayzer, Arkadelphia; recording secretary, Dr. G. H. Frank Morris, Cotton Plant; corresponding secretary, Dr. Alexander H. Brown, Argenta, and treasurer, Dr. R. J. Meddaugh, Little Rock. Little Rock was selected as the place of the next annual meeting.

State Meeting.—The thirty-eighth annual meeting of the Arkansas Medical Society was held in Eldorado, May 19-21, and the following officers were elected: president, Dr. St. Cloud Cooper, Fort Smith; vice-presidents, Drs. Gus. A. Warren, Black Rock; Robert A. Hilton, Eldorado, and Rufus S. Rice, Rogers; secretary, Dr. Clinton P. Meriwether, Little Rock (reelected); treasurer and editor of *The Journal of the Arkansas Medical Society,* Dr. William R. Bathurst, Little Rock (reelected); councilors, second district, Dr. Lorenzo T. Evans, Barren Fork; fourth district, Dr. Edwin C. McMullin, Pine Bluff; sixth district, Dr. Charles A. Archer, De Queen; eighth district, Dr. William A. Snodgrass, Little Rock; tenth district, Dr. Joseph T. Clegg, Siloam Springs; delegate to the American Medical Association, Dr. Robert Caldwell, Little Rock, and alternate, Dr. Joseph T. Clegg, Siloam Springs. Little Rock was selected as the place of the next meeting in May, 1915. Resolutions were adopted discontinuing the annual banquet at the society meeting, and placing a suitable memorial tablet in the state sanatorium, Boonville, in commemoration of the work of Dr. John L. Shibley, who initiated the crusade against tuberculosis in Arkansas.

FLORIDA

State Association Meeting.—At the forty-first annual meeting of the Florida Medical Association held in Orlando, May 13-15, the following officers were elected: president, Dr. F. Clinton Moor, Tallahassee; vice-presidents, Drs. Calvin D. Christ, Orlando; Thomas Truelson, Tampa, and John A. Simmons, Arcadia; secretary-treasurer, Dr. Graham E. Henson, Jacksonville; librarian, Dr. James D. Pasco, Jacksonville, and delegate to the American Medical Association, Dr. John MacDiar, Deland. Deland was selected as the next place of meeting; and it was decided that the association publish a monthly journal, to stimulate interest in the profession in general, and in the state organization in particular.

ILLINOIS

County Secretaries Elect.—At a meeting of the County Secretaries' Association, held in Decatur, May 19, Dr. Harry F. Bennett, Litchfield, was elected president, Dr. Elizabeth B. Ball, Quincy, vice-president, and Charles W. Carter, Clinton, secretary.

Personal.—Dr. and Mrs. Robert S. Denney, Aurora, sailed for Europe, May 19.——Dr. Thomas J. Whitten, Nokomis, for forty-seven years in practice, has decided to retire, and will reside with his daughter in Peoria.——Dr. Edwin E. Williams, Streator, is reported to be seriously ill.——Dr. Halley A. Smith, a member of the staff of the Rockford Hospital, has entered the Santa Fe System medical service at Topeka.

Failures of 1913 Graduates.—Table "C" published last week in The Journal, on page 1648, in State Board Statistics, contained a clerical error relating to the 1913 graduates of Bennett Medical College. The table shows correctly that of the 100 "graduates of 1909 to 1913" examined during the year, 14 (14 per cent.) failed. The correct figures show, however, that 54 graduates of 1913 were examined, and of these that 3, or 5.6 per cent., failed.

Hospital Notes.—At an informal meeting of the members of the La Salle-Peru Medical Society held in La Salle, recently, a plan for an isolation hospital on the dividing line between the two cities was discussed, and it is understood that the members went on record as favoring the plan.——Sixty physicians of Peru and vicinity met in Peru, May 7, to inspect the new People's Hospital. After the opening, the visiting physicians were entertained at dinner at the Hotel Peru. The institution is a three-story structure, has been erected at a cost of $90,000, and will accommodate fifty patients.

State Society Meeting.—At the annual meeting of the Illinois State Medical Society, held in Decatur, May 19-21, the following officers were elected: president, Dr. Albert L. Brittin, Athens; president-elect, Dr. Charles W. Lillie, East St. Louis; vice-presidents, Drs. Otto T. Freer, Chicago, and Everett J. Brown, Decatur; secretary, Dr. Wilbur H. Gilmore, Mount Vernon (reelected); treasurer, Dr. A J. Markley, Belvidere (reelected); councilors, first district, Dr. Emil Windmueller, Woodstock; second district, Dr. Edwin S. Gillespie, Wenona; eighth district, Dr. Elmer B. Cooley, Danville; delegates to the American Medical Association, Drs. Guy L. Armstrong, Taylorville; James W. Hamilton, Mount Vernon; Fernando C. Gale, Pekin; William L. Noble, Chicago; Charles P. Caldwell, Chicago, and Henry F. Lewis, Chicago; alternates, Drs. Alden Alguire, Belvidere; Lay G. Burroughs, Collinsville, Frank Buckmaster, Effingham; Frederick Tice, Chicago, Hugh N. MacKechnie, Chicago, and Duncan R. MacMartin, Chicago. Springfield was selected as the place of meeting for 1915, and the date appointed was May 18-20. At the meeting of the House of Delegates, May 19, a gift of $500 was made to Dr. Edmund W. Weis, Ottawa, for sixteen years secretary of the society.

Chicago

Personal.—Dr. and Mrs. Peter C. Schenkelberger, and Dr. Michael Goldenberg have gone abroad.

Council Provides Funds for Crime Investigation.—The city council at its last session passed an appropriation of $10,000 for the work of a special committee on crime, and $1,200 for the survey of the vice control situation to be made by the health committee.

City to Certify Babies.—Chief Justice Harry Olson of the municipal court proposes that the new psychopathic laboratory shall examine all children taken by foster parents from the morals court, and declare them to be normal before they are allowed to pass from the jurisdiction of the court.

Conference for Care of Subnormal.—A conference of Chicago charity workers to devise plans for the care of subnormal children and adults was held recently in the office of the county board. The conference was called because of the emergency which now exists in Illinois owing to the presence of 6,000 subnormals in Chicago and 18,000 in the state of Illinois, in need of institutional care, while the state institutions have a maximum capacity of 1,800.

Bills will be introduced into the next session of the legislature, and conferences will be held to determine the best legislation to be enacted.

The appointment of committees on legislation, propaganda, and to meet the Illinois state board of administration was decided on, but the members were not named. President A. A. McCormick was appointed chairman of the organization committee, which was made permanent.

INDIANA

Medical Library at Gary.—The members of the Gary County Medical Society are making preparations to start a medical library section in the Gary Public Library.

National Guard Changes.—Maj. John J. Boaz, M.C., Ind.N.G., surgeon in charge of the Field Hospital; Capt. John W. Sluss and Lieut. T. B. Victor Keene, all of Indianapolis, have resigned from the Medical Corps of the Indiana National Guard.

Meningitis in Indianapolis.—Twenty-four cases of cerebrospinal meningitis have been reported since January 1. Twelve cases and three deaths have been reported in May. The City Board of Health has urged the reporting of all cases so that a thorough investigation of each one may be made, and requests the cooperation of all physicians in stamping out the disease. Only nine deaths occurred from cerebrospinal meningitis during the year 1913.

Meat Packer Indicted by Grand Jury.—C. J. Gardner, a meat packer who was fined $500 and costs and sentenced to jail for six months after he was found guilty in police court on the charge of having unwholesome and diseased meat in his possession with intent to sell such meat, has been indicted on a similar charge by the Marion County grand jury. The case in police court involved the carcass of a diseased sheep. It is understood the charges on which the indictment is based involves the carcass of a cow.

Hospital Notes.—The Robert W. Long Hospital, Indianapolis, is almost completed and will be dedicated next month. The building has been erected at a cost of $250,000, exclusive of the site, and will be part of the University of Indiana

School of Medicine, and under the control of the faculty of the school. The hospital is the gift of Mr. and Mrs. Robert W. Long.——The new St. Francis Hospital, Beech Grove, will be dedicated with formal ceremonies June 21. The institution, which has been erected at a cost of $200,000, will accommodate 200 patients and will be conducted by the Sisters of St. Francis.

Personal.—Drs. William Osenbach and Frank L. Truitt were attacked with an axe during a neighborhood quarrel in Indianapolis, May 10.——Dr. Orlando B. Williams, Andrews, who has been seriously ill, is reported to be improving.——Dr. William F. Walsh, Indianapolis, was seriously injured, recently, in a collision between his automobile and a switch engine.——Dr. Algie H. Shock, Silverlake, is reported to be ill with small-pox.——Dr. Earl P. Wagner, South Bend, who has been ill for three weeks, is reported to be convalescent.——Dr. Herschel L. Bass, Ft. Branch, coroner of Gibson County, has resigned and moved to Elberfeld.——Drs. Roscoe L. Sensenich and Stanley A. Clark, South Bend, have been appointed trustees of the County Anti-Tuberculosis Camp.——Dr. Robert W. Harris has been elected president and Dr. Anna I. McKamp, secretary, and Dr. Elihu P. Easley a trustee of the Floyd County Hospital Association. The object of the organization is to promote the erection of a tuberculosis sanatorium on the "knobs" back of New Albany.

IOWA

Personal.—Dr. Bert A. Bowers and family, Granville, have gone abroad.——Dr. Cyrus O. Callison, Albion, was seriously injured by the overturning of his automobile, May 12.——Dr. Thomas E. Powers, Clarinda, is reported to be ill with diphtheria.

Sanatorium News.—Scott County Tuberculosis Sanatorium, Davenport, is nearly completed, and will be ready for occupancy June 15. The buildings have been erected at a cost of $75,000, and the institution will be able to accommodate forty patients.

State Society Meeting.—The annual meeting of the Iowa State Medical Society was held in Sioux City, May 13-15, under the presidency of Dr. Lee W. Dean, Iowa City. The following officers were elected: president, Dr. Henry C. Eschbach, Albia; vice-presidents, Drs. David W. Smouse, Des Moines, and John F. Herrick, Ottumwa; secretary, Dr. James W. Osborn, Des Moines (reelected); treasurer, Dr. William B. Small, Waterloo; editor, Dr. David S. Fairchild, Clinton; councilors: second district, Dr. Henry Albert, Iowa City; third district, Dr. Joseph C. Powers, Hampton; fourth district, Dr. Paul E. Gardner, New Hampton; seventh district, Dr. Corwin W. Cornell, Knoxville; eighth district, Dr. J. Frank Aldrich, Shenandoah; delegates to the American Medical Association, Drs. Lawrence W. Littig, Davenport; Mathew N. Voldeng, Cherokee, and John C. Rockafellow, Des Moines; and alternates, Drs. Walter L. Bierring, Des Moines; Daniel H. Bowen, Waukon, and Charles S. James, Centerville. Waterloo was decided on as the next place of meeting for 1915. The House of Delegates decided to purchase the *Iowa Medical Journal* from Dr. Edward Dorr, Des Moines, for $1,000. This offer includes the exchange, advertising and subscription lists and the good-will of the publication.

MASSACHUSETTS

Testimonial to State Health Officer.—The term of service of Dr. Henry Pickering Walcott, Boston, for thirty-three years health officer and chairman of the State Board of Health, terminated May 19. On the occasion of his retirement, an address was presented to him, signed by 2,200 members of the medical profession of Massachusetts. The address sets forth the public health work done by Dr. Walcott, his establishment of a laboratory for the free production and distribution of diphtheria antitoxin, the establishment through his influence of a laboratory for the preparation of antitoxins and animal vaccines, and the many improvements in sanitary conditions carried out under his recommendation, and other great and grave problems of sanitation and hygiene, and closes with the following eulogium: "You have met the responsibilities which you have assumed with such wisdom, discretion, and rare modesty, as to make the task of your successor who would uphold the standard bequeathed to him, a difficult one indeed."

MICHIGAN

Personal.—Dr. Philip D. Bourland has succeeded Dr J. M. P. Pichette as health officer of Lake Linden.——Dr. William L. Hircik, Whitehall, is reported to be seriously ill with diphtheria.

New Sanitarium.—Dr. Thomas Bennett O'Keefe, Grand Rapids, will build a new sanitarium building, three stories and a basement in height, adjoining the present building at Reed's Lake. The new building will cost $20,000, will accommodate fifty patients, and will be completed in the early autumn.

New Officers.—Southwestern Michigan Medical Society, made up of specialists in diseases of the eye, ear, nose and throat, of Battle Creek, Kalamazoo, Grand Rapids, Lansing and Muskegon, at Battle Creek, May 4: president, Dr. Edward J. Bernstein, Kalamazoo; secretary-treasurer, Dr. Wilfrid Haughey, Battle Creek.

MINNESOTA

Tag-Day in Duluth.—On May 16 the Women of Linnaea Society held a tag-day for the aid of tuberculosis sufferers, as a result of which $1,000 was realized.

Range Physicians Organize.—At a meeting of the physicians of Mesaba Range held in Virginia, May 11, the Range Medical Association was organized, with the following officers: president, Dr. John C. Farmer, McKinley; vice-president, Dr. Charles B. Lenont, Virginia, and secretary, Dr. Henry E. Michelson, Virginia.

MISSISSIPPI

Fever Detains Steamer.—The British steamer *Carisbrook*, from Tela, British Honduras, to Gulfport, with ballast, was detained at the quarantine station, Ship Island, on account of several cases of fever among the crew.

Colored Physicians Hold Meeting.—At the annual meeting of the Colored Medical, Dental and Pharmaceutical Association of Mississippi, held in Jackson, April 29 and 30, Dr. Daniel W. Sherrod, Meridian, was elected president; W. M. P. Harris, Vicksburg, vice-president; Dr. Lemon R. Young, Hattiesburg, secretary; and B. W. Turner, treasurer. Meridian was selected as the next place of meeting.

Pellagra in 1913.—During the first nine months of 1913, according to the report of the State Board of Health, there were 3,734 cases of pellagra reported, of which 1,689 were white and 2,045 colored. The deaths were 544, of which 106 were of whites and 406 colored. This represented 3.6 per cent. of the total deaths, 2.6 per cent. of white deaths and 4.2 colored, a ratio of nearly two to one. During the entire year the deaths were 795. It is believed that more accurate statistics would somewhat increase this figure.

MISSOURI

New State Society Officers.—At the fifty-seventh annual meeting of the Missouri State Medical Association held at Joplin, May 12-14, the following officers were elected: president, Dr. Henry C. Shuttee, Westplains; vice-presidents, Drs. James A. McComb, Lebanon; Godfrey O. Cuppaidge, Moberly; William G. Estill, Lawson; Theodore A. Coffelt, Springfield, and William A. Clark, Jefferson City; secretary and editor, Dr. Edward J. Goodwin, St. Louis (reelected); treasurer, Dr. Franklin Welch, Salisbury (reelected); councilors, sixteenth district, Dr. Harry S. Crawford, Harrisonville; nineteenth district, Dr. Stephen V. Bedford, Jefferson City; twenty-second district, Dr. Garnett S. Cannon, Fornfelt; twenty-sixth district, Dr. William H. Breuer, St. James; twenty-seventh district, Dr. James H. Elliott, Westplains; twenty-eighth district, Dr. Thomas O. Klinger, Springfield; twenty-ninth district, Dr. Robert L. Wills, Neosho; delegates to the American Medical Association, Drs. Enoch H. Miller, Liberty; Andrew W. McAlister, Jr., Kansas City; Henry L. Reid, Charleston; Edward J. Goodwin, St. Louis, and Robert M. Funkhouser, St. Louis. The next meeting will be held in St. Joseph.

NEBRASKA

Personal.—Dr. Samuel K. Spalding, Omaha, has been elected medical director of the Department of Nebraska G. A. R.——Dr. Albert J. Coats, Fairbury, sails for Germany, June 26.

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Medical News

ARKANSAS

Colored Physicians Society Holds Meeting.—The State Association of Negro Physicians held its annual meeting in Little Rock, May 6 and 7, and elected the following officers: president, Dr. Steven W. Harrison, Fort Smith; vice-presidents, Drs. Madison M. McBeth, Plum Bayou; Harold H. Phipps, Hot Springs, and J. E. Swayzer, Arkadelphia; recording secretary, Dr. G. H. Frank Morris, Cotton Plant; corresponding secretary, Dr. Alexander H. Brown, Argenta, and treasurer, Dr. R. J. Meddaugh, Little Rock. Little Rock was selected as the place of the next annual meeting.

State Meeting.—The thirty-eighth annual meeting of the Arkansas Medical Society was held in Eldorado, May 19-21, and the following officers were elected: president, Dr. St. Cloud Cooper, Fort Smith; vice-presidents, Drs. Gus. A. Warren, Black Rock; Robert A. Hilton, Eldorado, and Rufus S. Rice, Rogers; secretary, Dr. Clinton P. Meriwether, Little Rock (reelected); treasurer and editor of *The Journal of the Arkansas Medical Society*, Dr. William R. Bathurst, Little Rock (reelected); councilors, second district, Dr. Lorenzo T. Evans, Barren Fork; fourth district, Dr. Edwin C. McMullin, Pine Bluff; sixth district, Dr. Charles A. Archer, De Queen; eighth district, Dr. William A. Snodgrass, Little Rock; tenth district, Dr. Joseph T. Clegg, Siloam Springs; delegate to the American Medical Association, Dr. Robert Caldwell, Little Rock, and alternate, Dr. Joseph T. Clegg, Siloam Springs. Little Rock was selected as the place of the next meeting in May, 1915. Resolutions were adopted discontinuing the annual banquet at the society meeting, and placing a suitable memorial tablet in the state sanatorium, Booneville, in commemoration of the work of Dr. John L. Shibley, who initiated the crusade against tuberculosis in Arkansas.

FLORIDA

State Association Meeting.—At the forty-first annual meeting of the Florida Medical Association held in Orlando, May 13-15, the following officers were elected: president, Dr. F. Clinton Moor, Tallahassee; vice-presidents, Drs. Calvin D. Christ, Orlando; Thomas Truelson, Tampa, and John A. Simmons, Arcadia; secretary-treasurer, Dr. Graham E. Henson, Jacksonville; librarian, Dr. James D. Pasco, Jacksonville, and delegate to the American Medical Association, Dr. John MacDiar, Deland. Deland was selected as the next place of meeting; and it was decided that the association publish a monthly journal, to stimulate interest in the profession in general, and in the state organization in particular.

ILLINOIS

County Secretaries Elect.—At a meeting of the County Secretaries' Association, held in Decatur, May 19, Dr. Harry F. Bennett, Litchfield, was elected president, Dr. Elizabeth B. Ball, Quincy. vice-president, and Charles W. Carter, Clinton, secretary.

Personal.—Dr. and Mrs. Robert S. Denney, Aurora, sailed for Europe, May 19.——Dr. Thomas J. Whitten, Nokomis, for forty-seven years in practice, has decided to retire, and will reside with his daughter in Peoria.——Dr. Edwin E. Williams, Streator, is reported to be seriously ill.——Dr. Halley A. Smith, a member of the staff of the Rockford Hospital, has entered the Santa Fe System medical service at Topeka.

Failures of 1913 Graduates.—Table "C" published last week in The Journal, on page 1648, in State Board Statistics, contained a clerical error relating to the 1913 graduates of Bennett Medical College. The table shows correctly that of the 100 "graduates of 1909 to 1913" examined during the year, 14 (14 per cent.) failed. The correct figures show, however, that 54 graduates of 1913 were examined, and of these that 3, or 5.6 per cent., failed.

Hospital Notes.—At an informal meeting of the members of the La Salle-Peru Medical Society held in La Salle, recently, a plan for an isolation hospital on the dividing line between the two cities was discussed, and it is understood that the members went on record as favoring the plan.——Sixty physicians of Peru and vicinity met in Peru, May 7, to inspect the new People's Hospital. After the opening, the visiting physicians were entertained at dinner at the Hotel Peru. The institution is a three-story structure, has been erected at a cost of $90,000, and will accommodate fifty patients.

State Society Meeting.—At the annual meeting of the Illinois State Medical Society, held in Decatur, May 19-21, the following officers were elected: president, Dr. Albert L. Brittin, Athens; president-elect, Dr. Charles W. Lillie, East St. Louis; vice-presidents, Drs. Otto T. Freer, Chicago, and Everett J. Brown, Decatur; secretary, Dr. Wilbur H. Gilmore, Mount Vernon (reelected); treasurer, Dr. A J. Markley, Belvidere (reelected); councilors, first district, Dr. Emil Windmueller, Woodstock; second district, Dr. Edwin S. Gillespie, Wenona; eighth district, Dr. Elmer B. Cooley, Danville; delegates to the American Medical Association, Drs. Guy L. Armstrong, Taylorville; James W. Hamilton, Mount Vernon; Fernando C. Gale, Pekin; William L. Noble, Chicago; Charles P. Caldwell, Chicago, and Henry F. Lewis, Chicago; alternates, Drs. Alden Alguire, Belvidere; Lay G. Burroughs, Collinsville, Frank Buckmaster, Effingham; Frederick Tice, Chicago, Hugh N. MacKechnie, Chicago, and Duncan R. MacMartin, Chicago. Springfield was selected as the place of meeting for 1915, and the date appointed was May 18-20. At the meeting of the House of Delegates, May 19, a gift of $500 was made to Dr. Edmund W. Weis, Ottawa, for sixteen years secretary of the society.

Chicago

Personal.—Dr. and Mrs. Peter C. Schenkelberger, and Dr. Michael Goldenberg have gone abroad.

Council Provides Funds for Crime Investigation—The city council at its last session passed an appropriation of $10,000 for the work of a special committee on crime, and $1,200 for the survey of the vice control situation to be made by the health committee.

City to Certify Babies.—Chief Justice Harry Olson of the municipal court proposes that the new psychopathic laboratory shall examine all children taken by foster parents from the morals court, and declare them to be normal before they are allowed to pass from the jurisdiction of the court.

Conference for Care of Subnormal.—A conference of Chicago charity workers to devise plans for the care of subnormal children and adults was held recently in the office of the county board. The conference was called because of the emergency which now exists in Illinois owing to the presence of 6,000 subnormals in Chicago and 18,000 in the state of Illinois, in need of institutional care, while the state institutions have a maximum capacity of 1,800.

Bills will be introduced into the next session of the legislature, and conferences will be held to determine the best legislation to be enacted.

The appointment of committees on legislation, propaganda, and to meet the Illinois state board of administration was decided on, but the members were not named. President A. A. McCormick was appointed chairman of the organization committee, which was made permanent.

INDIANA

Medical Library at Gary.—The members of the Gary County Medical Society are making preparations to start a medical library section in the Gary Public Library.

National Guard Changes.—Maj. John J. Boaz, M.C., Ind.N.G., surgeon in charge of the Field Hospital; Capt. John W. Sluss and Lieut. T. B. Victor Keene, all of Indianapolis, have resigned from the Medical Corps of the Indiana National Guard.

Meningitis in Indianapolis.—Twenty-four cases of cerebrospinal meningitis have been reported since January 1. Twelve cases and three deaths have been reported in May. The City Board of Health has urged the reporting of all cases so that a thorough investigation of each one may be made, and requests the cooperation of all physicians in stamping out the disease. Only nine deaths occurred from cerebrospinal meningitis during the year 1913.

Meat Packer Indicted by Grand Jury.—C. J. Gardner, a meat packer who was fined $500 and costs and sentenced to jail for six months after he was found guilty in police court on the charge of having unwholesome and diseased meat in his possession with intent to sell such meat, has been indicted on a similar charge by the Marion County grand jury. The case in police court involved the carcass of a diseased sheep. It is understood the charges on which the indictment is based involves the carcass of a cow.

Hospital Notes.—The Robert W. Long Hospital, Indianapolis, is almost completed and will be dedicated next month. The building has been erected at a cost of $250,000, exclusive of the site, and will be part of the University of Indiana

School of Medicine, and under the control of the faculty of the school. The hospital is the gift of Mr. and Mrs. Robert W. Long.——The new St. Francis Hospital, Beech Grove, will be dedicated with formal ceremonies June 21. The institution, which has been erected at a cost of $200,000, will accommodate 200 patients and will be conducted by the Sisters of St. Francis.

Personal.—Drs. William Osenbach and Frank L. Truitt were attacked with an axe during a neighborhood quarrel in Indianapolis, May 10.——Dr. Orlando B. Williams, Andrews, who has been seriously ill, is reported to be improving.——Dr. William F. Walsh, Indianapolis, was seriously injured, recently, in a collision between his automobile and a switch engine.——Dr. Algie H. Shock, Silverlake, is reported to be ill with small-pox.——Dr. Earl P. Wagner, South Bend, who has been ill for three weeks, is reported to be convalescent.——Dr. Herschel L. Bass, Ft. Branch, coroner of Gibson County, has resigned and moved to Elberfeld.——Drs. Roscoe L. Sensenich and Stanley A. Clark, South Bend, have been appointed trustees of the County Anti-Tuberculosis Camp.——Dr. Robert W. Harris has been elected president and Dr. Anna I. McKamp, secretary, and Dr. Elihu P. Easley a trustee of the Floyd County Hospital Association. The object of the organization is to promote the erection of a tuberculosis sanatorium on the "knobs" back of New Albany.

IOWA

Personal.—Dr. Bert A. Bowers and family, Granville, have gone abroad.——Dr. Cyrus O. Callison, Albion, was seriously injured by the overturning of his automobile, May 12.——Dr. Thomas E. Powers, Clarinda, is reported to be ill with diphtheria.

Sanatorium News.—Scott County Tuberculosis Sanatorium, Davenport, is nearly completed, and will be ready for occupancy June 15. The buildings have been erected at a cost of $75,000, and the institution will be able to accommodate forty patients.

State Society Meeting.—The annual meeting of the Iowa State Medical Society was held in Sioux City, May 13-15, under the presidency of Dr. Lee W. Dean, Iowa City. The following officers were elected: president, Dr. Henry C. Eschbach, Albia; vice-presidents, Drs. David W. Smouse, Des Moines, and John F. Herrick, Ottumwa; secretary, Dr. James W. Osborn, Des Moines (reelected); treasurer, Dr. William B. Small, Waterloo; editor, Dr. David S. Fairchild, Clinton; councilors: second district, Dr. Henry Albert, Iowa City; third district, Dr. Joseph C. Powers, Hampton; fourth district, Dr. Paul E. Gardner, New Hampton; seventh district, Dr. Corwin W. Cornell, Knoxville; eighth district, Dr. J. Frank Aldrich, Shenandoah; delegates to the American Medical Association, Drs. Lawrence W. Littig, Davenport; Mathew N. Voldeng, Cherokee, and John C. Rockafellow, Des Moines; and alternates, Drs. Walter L. Bierring, Des Moines; Daniel H. Bowen, Waukon, and Charles S. James, Centerville. Waterloo was decided on as the next place of meeting for 1915. The House of Delegates decided to purchase the *Iowa Medical Journal* from Dr. Edward Dorr, Des Moines, for $1,000. This offer includes the exchange, advertising and subscription lists and the good-will of the publication.

MASSACHUSETTS

Testimonial to State Health Officer.—The term of service of Dr. Henry Pickering Walcott, Boston, for thirty-three years health officer and chairman of the State Board of Health, terminated May 19. On the occasion of his retirement, an address was presented to him, signed by 2,200 members of the medical profession of Massachusetts. The address sets forth the public health work done by Dr. Walcott, his establishment of a laboratory for the free production and distribution of diphtheria antitoxin, the establishment through his influence of a laboratory for the preparation of antitoxins and animal vaccines, and the many improvements in sanitary conditions carried out under his recommendation, and other great and grave problems of sanitation and hygiene, and closes with the following eulogium: "You have met the responsibilities which you have assumed with such wisdom, discretion, and rare modesty, as to make the task of your successor who would uphold the standard bequeathed to him, a difficult one indeed."

MICHIGAN

Personal.—Dr. Philip D. Bourland has succeeded Dr J. M. P. Pichette as health officer of Lake Linden.——Dr. William L. Hircik, Whitehall, is reported to be seriously ill with diphtheria.

New Sanitarium.—Dr. Thomas Bennett O'Keefe, Grand Rapids, will build a new sanitarium building, three stories and a basement in height, adjoining the present building at Reed's Lake. The new building will cost $20,000, will accommodate fifty patients, and will be completed in the early autumn.

New Officers.—Southwestern Michigan Medical Society, made up of specialists in diseases of the eye, ear, nose and throat, of Battle Creek, Kalamazoo, Grand Rapids, Lansing and Muskegon, at Battle Creek, May 4: president, Dr. Edward J. Bernstein, Kalamazoo; secretary-treasurer, Dr. Wilfrid Haughey, Battle Creek.

MINNESOTA

Tag-Day in Duluth.—On May 16 the Women of Linnaea Society held a tag-day for the aid of tuberculosis sufferers, as a result of which $1,000 was realized.

Range Physicians Organize.—At a meeting of the physicians of Mesaba Range held in Virginia, May 11, the Range Medical Association was organized, with the following officers: president, Dr. John C. Farmer, McKinley; vice-president, Dr. Charles B. Lenont, Virginia, and secretary, Dr. Henry E. Michelson, Virginia.

MISSISSIPPI

Fever Detains Steamer.—The British steamer *Carisbrook*, from Tela, British Honduras, to Gulfport, with ballast, was detained at the quarantine station, Ship Island, on account of several cases of fever among the crew.

Colored Physicians Hold Meeting.—At the annual meeting of the Colored Medical, Dental and Pharmaceutical Association of Mississippi, held in Jackson, April 29 and 30, Dr. Daniel W. Sherrod, Meridian, was elected president; W. M. P. Harris, Vicksburg, vice-president; Dr. Lemon R. Young, Hattiesburg, secretary; and B. W. Turner, treasurer. Meridian was selected as the next place of meeting.

Pellagra in 1913.—During the first nine months of 1913, according to the report of the State Board of Health, there were 3,734 cases of pellagra reported, of which 1,689 were white and 2,045 colored. The deaths were 544, of which 106 were of whites and 406 colored. This represented 3.6 per cent. of the total deaths, 2.6 per cent. of white deaths and 4.2 colored, a ratio of nearly two to one. During the entire year the deaths were 795. It is believed that more accurate statistics would somewhat increase this figure.

MISSOURI

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200 delinquents. A local committee of Lancaster County physicians secured a very suitable convention hall and committee rooms for the meetings. The social features were entertaining, instructive and unexcelled—if ever equaled—at any prior state association convention. By a majority vote of the house an invitation to hold the next annual convention in Hastings, Neb., was accepted.

NEW HAMPSHIRE

State Society Meeting.—The one hundred and twenty-third annual meeting of the New Hampshire Medical Society was held in Concord, May 13-15, under the presidency of Dr. Abram W. Mitchell, Epping. Dr. Charles F. Flanders, Manchester, presided over the medical section, and Dr. John M. Gile, Hanover, over the surgical section. The following officers were elected: president, Dr. Herbert K. Faulkner, Keene; secretary, Dr. Dennis E. Sullivan, Concord (reelected); councilors, Drs. Charles S. Walker, Keene; and Emery M. Fitch, Claremont; trustee, Dr. John M. Gile, Hanover; delegates to the American Medical Association, Dr. Irving A. Watson, Concord, and alternate, Dr. George W. McGregor, Littleton. Drs. John F. Robinson and George S. Foster, Manchester, were recommended to the governor as members of the Regular Board of Medical Examiners.

NEW JERSEY

Atlantic City Number.—The descriptive article on "The Charms of the Convention City" which appeared in the Atlantic City Number of The Journal was contributed almost wholly by Dr. C. C. Charlton.

New Hospital Directors.—The Camden County Board of Free Holders on May 13 appointed the following to take charge of the new tuberculosis hospital at Ancora: Drs. J. W. Schellenger, Joseph E. Roberts, Jr., Camden, Morgan Solly, Addison B. Reder, Camden, and John I. Hoverton.

Relief Society Election.—The thirty-second annual meeting of the Relief Society for Widows and Orphans of Medical Men of New Jersey was held in Newark, May 13, and the following officers were elected: president, Dr. Edward J. Ill, Newark; vice-president, Dr. Norton L. Wilson, Elizabeth; secretary, Dr. Charles D. Bennett, Newark; treasurer, Dr. Harold A. Tarbell, Newark, and trustees, Drs. Gordon K. Dickinson, Jersey City; Frank M. Child, Hoboken, and Christopher C. Beling, Newark.

NEW YORK

Personal.—Dr. Leverett D. Bristol, Syracuse, has been appointed head of the public health laboratory of the University of North Dakota.——Drs. S. W. Gill Wylie and Adolf Rostenberg have sailed for Europe.

Harrington Lectures.—The Harrington lectures of the Medical Department of the University of Buffalo will be delivered by Prof. Ludwig Pick, Berlin, Germany, on the evening of June 2, and the afternoon of June 2 and 3. The *subject of the lectures will be* "Some Recent Advances in Pathologic Anatomy." The lecture will be illustrated by lantern-slides and many lumière plates.

Buys Site for Hospital.—It is announced that the Beth Israel Association has made public its plans for the construction of one of the largest private hospitals in the city. The site purchased is on Livingston Place, facing Stuyvesant Square and contains 14,000 square feet. A sixteen story hospital building will be erected at a cost of $1,000,000. The new hospital will provide for 500 patients and will be the last word in hospital construction and equipment.

New York City

Street Accidents in Greater New York.—*During the year* 1913 in the streets of the Greater City there were 119 persons killed by trolleys, 169 by horse-drawn vehicles and 109 by automobiles.

Vaccination Stations.—The Department of Health has arranged to have small-pox vaccination performed daily in all the children's clinics of the department and also on two days of each week at each infant's milk station. This action will create sixty-two offices of the department where vaccination may be obtained free of charge.

Personal.—Dr. Otto Glogau has been appointed delegate to the Third International Congress on Occupational Diseases, to be held in Vienna in September next.——Dr. and Mrs. William Lintz, Brooklyn, sailed for Europe, May 16.

Hospital Reorganization Urged.—At the fifth annual City Conference of Charities and Corrections, which was in session May 19 and 20, Dr. Sigismund S. Goldwater outlined an improved plan for the hospital service of the city. Dr. Goldwater opposes the expansion of hospitals as health centers, holding that this work is preventive and belongs to the province of the Health Department. He thought that either a large board of trustees, a smaller board, or a single commissioner might satisfactorily administer the city hospitals. Nine ideally organized hospitals distributed among three city departments in groups of three would *serve the city better than nine hospitals improperly organized*, but under single control. The project to put all hospitals of the city under a new department of hospitals was received with favor by those who had recently made an investigation of the city hospitals for the mayor.

NORTH DAKOTA

Personal.—Dr. George A. Stark, Mandan, is critically ill as a result of a cerebral hemorrhage.——Dr. William H. Witherstine, Grand Forks, has been appointed county coroner, vice Dr. Francis E. Murphy.

Conservation of Vision.—Dr. John H. Rindlaub of Fargo has been selected as lecture bureau manager in connection with the lectures on the conservation of vision provided for under the auspices of the Council on Health and Public Instruction of the American Medical Association. It is hoped to have delivered at least one lecture a year in each county in the state. These lectures will cover the subjects of ophthalmia neonatorum, the medical inspection of schoolchildren, the prevention of eye injuries in shops and factories, proper illumination of schools, halls, trains, etc., the prevention and spread of trachoma and some others. Gonorrhea is a reportable disease in North Dakota.

New Officers of State Society.—At the annual meeting of the North Dakota Medical Association, held in Grand Forks, May 13 and 14, the following officers were elected: president, Dr. R. Hudson Beek, Lakota; vice-presidents, Drs. Victor J. La Rose, Bismarck, and George M. Williamson, Grand Forks; secretary, Dr. Hezekiah J. Rowe, Casselton (reelected); treasurer, Dr. Charles S. Crane, Grand Forks; councilors, Drs. George A. Carpenter, Fargo; Robert D. Campbell, Grand Forks; and Francis R. Smyth, Bismarck; and delegate to the American Medical Association, Dr. Charles S. Crane, Grand Forks, vice Dr. James Grassick, Grand Forks. Bismarck was selected as the next place of meeting. The society recommended the following members to the State Examining Board: Drs. Alexander J. McCannel, Minot; Paul Sorkness, Fargo; and John E. Countryman, Grafton.

OKLAHOMA

Personal.—Dr. Samuel W. Wilson, Lindsay, who has been ill with rheumatism, is said to be improving.——Dr. Dumont D. Howell, Nowata, was thrown from a buggy recently, fracturing his left leg above the ankle.——Dr. James P. McRae, Bromide, has been *completely exonerated of blame* following the death of B. B. Askew, Bromide, from alleged strychnin poisoning.——Dr. Roy A. Morter, Norman, has been appointed a member of the staff of the Michigan State Hospital, Kalamazoo, and has been assigned to duty in the women's department.——The offices of Drs. David M. and R. L. Montgomery, Marlow, were destroyed by fire recently.

Hospital Notes.—It is announced that a sanatorium for tuberculosis will be opened in Tahlequah in a short time.——The Sisters of Charity at McAlester have purchased the Cornish property, and will open it as a hospital.——Dr. J. Clay Williams has purchased the building of Dr. Elmer E. Lumm, Stroud, and will fit up the upper rooms of the building for a sanatorium, with accommodations for ten patients.——Fire at the Alva Hospital, recently, caused damage to the extent of $500. The patients were removed without casualty.——Work has been commenced on the new Indian hospital at Lawton, which is to cost $40,000. The building will be ready for occupancy this fall.

State Association Meeting.—The twenty-second annual meeting of the Oklahoma State Medical Association was held in Guthrie, May 12-14, under the presidency of Dr. James M. Byrum, Shawnee. The following officers were elected: president, Dr. John W. Riley, Oklahoma City; vice-presidents, Drs. Charles R. Hume, Anadarko, and Edward F. Davis, Oklahoma City; secretary-treasurer and editor, Dr. Claude A. Thompson, Muskogee (reelected); councilors, first district, composed of Cimarron, Texas, Beaver, Harper, Ellis, Woods and Woodward counties, Dr. R. A. Workman, Woodward; second district, composed of Roger Mills, Becham, Washita, Custer, Dewey, Blaine counties, Dr. Ellis Lamb, Clinton; third district, composed of Harmon, Jackson, Greer, Kiowa, Tillman, Comanche and Cotton counties, Dr. Samuel P. Rawls, Altus; fourth district, composed of Alfalfa, Grant, Garfield, Major, Kay and Noble counties, Dr. Walter H. McKenzie, Enid; fifth district, composed of Kingfisher, Logan, Oklahoma and Canadian counties, Dr. Fred Y. Cronk, Guthrie; sixth district, composed of Caddo, Grady, Stephens, McClain, Garvin and Jefferson counties, Dr. Clinton M. Maupin, Waurika; seventh district, composed of Osage, Pawnee, Creek, Okfuskee, Okmulgee and Tulsa counties, Dr. Walter E. Wright, Tulsa; eighth district, composed of Cleveland, Payne, Lincoln, Pottawatomie and Seminole counties, Dr. H. Marion Williams, Wellston; ninth district, composed of Coal, Pontotoc, Murray, Johnston, Marshall, Love and Carter counties, Dr. J. T. Slover, Sulphur; tenth district, composed of Washington, Nowata, Rogers, Mayes, Craig, Ottawa and Delaware counties, Dr. Robert L. Mitchell, Vinita; eleventh district, composed of Wagoner, Muskogee, McIntosh, Cherokee, Adair and Haskell counties, Dr. Pleasant P. Nesbitt, Muskogee; twelfth district, composed of Hughes, Pittsburg, Latimer, Sequoyah and Leflore counties, Dr. Leonard S. Willour, McAlester, and thirteenth district, composed of Atoka, Bryan, Choctaw, Pushmataha and McCurtain counties, Dr. John L. Austin, Durant. Among the changes to the constitution and by-laws adopted at this meeting were the following: Giving the president and secretary a full vote in the Council and House of Delegates; making the term of office of secretary three instead of two years; giving the council authority to establish a physician's defense bureau, the entire assessment for membership and protection not to exceed $5 a year; making the number of councilors subjects to change by the House of Delegates. The next meeting will be held in Bartlesville, and the meeting for 1916 in Medicine Park. The Women's Auxiliary held its seventh annual meeting at Guthrie, May 13 and 14. The chief subjects discussed by the physicians' wives were: "How Can We Best Promote Interest in, and Establish Auxiliaries to the County Societies, and in What Way Can We, as an Organized Body, be of the Greatest Assistance to the Physicians and the Public" and "The Rights of the Physician's Wife."

PENNSYLVANIA

Rules against Hospital Noises.—The supreme court of Pennsylvania, May 19, sustained a decree handed down by the lower court, ordering the operating-room in the Homeopathic Medical and Surgical Hospital of Reading to be removed to another part of the building, as it was shown the noises therefrom were annoying to the neighbors.

Typhoid Due to Coatesville.—Five children of the Embreeville School in Newlin Township, Chester County, developed typhoid within two days, and in tracing the cause of the outbreak it was found that the school water-supply was obtained from a farm, one-eighth of a mile from the schoolhouse. As the water had to be carried, it was thought the boys have been filling the water buckets at the Brandywine Creek. The sewage from Coatesville, where several cases of typhoid have recently existed, is emptied into this stream without treatment. At a conference of the citizens of Coatesville and the state health commissioner in Harrisburg, May 22, regarding a new water-supply, Dr. Samuel G. Dixon, Harrisburg, thereon requested Attorney General Bell to begin suit against the borough of Coatesville under the act of 1905 for failing to file plans of the existing system of sewers and plans for a sewage disposal plant.

Philadelphia

Alumnae to Meet.—The Alumnae Association of the Women's Medical College of Pennsylvania, Philadelphia, will hold its thirty-ninth annual meeting at the college building, North College Avenue and Twenty-First Street, June 4 and 5, under the presidency of Dr. Eleanor C. Jones. The annual reception and dinner will be held June 4 at the Bellevue-Stratford.

TEXAS

No Quarantine Changes.—Governor Colquitt, after conferring with State Health Officer Steiner, announced, May 4, that there would be no change in the quarantine regulations for Galveston, so far as refugees from main points were concerned.

Roentgenologists Organize.—The Texas Roentgen-Ray Association was organized at Houston, May 14, and the following officers were elected: president, Dr. George D. Bond, Fort Worth; vice-president, Dr. William O. Sauermann, Houston; secretary-treasurer, Dr. John W. Torbett, Marlin. The association is to meet each year at the time and place of the state association convention.

Tulane Alumni Meet.—The alumni of Tulane University, in attendance on the convention of the State Medical Association of Texas, held a meeting and banquet, May 13. Dr. Charles C. Green, Houston, was toastmaster, and the following officers were elected: president, Dr. William M. Brumby, San Antonio, vice-president, Dr. Charles C. Green, Houston; and secretary-treasurer, Dr. M. M. Brown, Mexia.

State Association Meeting.—At the forty-eighth annual meeting of the State Medical Association of Texas, held in Houston, May 12-14, the following officers were elected: president, Dr. Frank D. Boyd, Fort Worth; vice-presidents, Drs. Granville T. Hall, Big Springs; Leopold H. Reeves, Decatur, and Khleber H. Beall, Fort Worth; councilors, second district, Dr. Newton J. Phenix, Colorado (reelected); seventh district, Dr. Thomas J. Bennett, Austin (reelected); eighth district, Dr. Walter Shropshire, Yoakum, (reelected); ninth district, Dr. W. Wallace Ralston, Houston (reelected); tenth district, Dr. Arthur R. Sholars; fourteenth district, Dr. Alva W Carnes, Hutchins; trustee, Dr. R. R. White, Temple, to succeed Dr. John S. Lankford, San Antonio, term expired; delegates to the American Medical Association, Dr. Charles E. Cantrell, Greenville, and Marvin L. Graves, Galveston; alternates, Drs. Witten B. Russ, San Antonio, and Albert Woldert, Tyler. Fort Worth was selected as the next place of meeting.——A Council on Medical Defense, for the purpose of investigating and defending all damage suits against members of the profession, was created by the House of Delegates, May 13.——A resolution was introduced providing that the president appoint a committee to look into the question of providing for indigent members of the association, with a view to establishing a home for such members.——A resolution was introduced providing for the appointment of a committee to formulate a list of drugs which should not be sold except on prescription of a physician was adopted.——A resolution was introduced by Dr. Joseph E. Dildy, Lampasas, providing for the recommendation of the enactment of a law to protect children of the state from disease, by medical inspection of schoolchildren and such other means as may be decided on.——On May 12 memorial exercises were held by the association in honor of members who had died during the last year.

WEST VIRGINIA

Personal.—Dr. Edgar B. Plant has been appointed physician of Ohio County.——Dr. A. Maywood Forsythe, Maynard, who has been seriously ill with pneumonia, is reported to be improving.

Anti-Tuberculosis League Organized.—The Anti-Tuberculosis League of Kanawha County has been incorporated at Charleston by George S. Laidley, F. M. Staunton, Louise F. Jackson, Ethel Ruffner and Virginia A. Payne.

State Society Meeting.—The annual meeting of the West Virginia Medical Society was held in Bluefield, May 13-15, and the following officers were elected: president, Dr. Henry P. Linsz, Wheeling; vice-presidents, Drs. Joseph B. Kirk, Elkhorn, Theodore K. Oates, Martinsburg, and Isaac N. Houston, Moundsville; secretary, Dr. J. Howard Anderson, Marytown; and treasurer, Dr. Hugh G. Nicholson, Charleston; and delegate to the American Medical Association, Dr. Frank L. Hupp, Wheeling. Huntington was selected as the next place of meeting.

WISCONSIN

Personal.—Dr. Albert Jenner, Milwaukee, has sailed for Europe.——Dr. and Mrs. Edward B. Felter, Plymouth, sail for Europe, June 18.

Health Conference Called.—Dr. Cornelius A. Harper, secretary of the State Board of Health, has called a conference of heads of health departments to be held in Madison, June 16 and 17.

Contract for Tuberculosis Camp Awarded.—The State Board of Control has awarded the contract for the construction of the tuberculosis camp on Tomahawk Lake for $8.000. The camp is to be completed by September 1.

New Isolation Hospital.—At a meeting of the members of the State Commission, the County Board of Supervisors and the Douglas County Medical Association, held in Superior, May 13, a campaign was inaugurated for a new city and county isolation hospital.

Sanatorium to Be Used for Insane Patients Only.—Patients of the Douglas County Tuberculosis Sanatorium, Superior, are to be transferred to the Eau Claire or Manitowoc institution, and the hospital will be converted into a state hospital for insane patients afflicted with tuberculosis.

Needs of Emergency Hospital.—Dr. Dennis J. Hayes, president of the Milwaukee County Medical Society, has appointed the following committee of ten to inquire into the needs of an emergency hospital: Drs. Franz Pfister, Lewis G. Nolte, John R. McDill, Albin A. Krygier, Robert G. Sayles, Frederick J. Gaenslen, Frederic C. Gillen, Hubert F. Jermain, Charles H. Lemon and William T. Lochemes.

GENERAL

Anesthetists to Meet.—The second annual meeting of the American Association of Anesthetists will be held at the Hotel Chelsea, Atlantic City, June 22, under the presidency of Dr. J. Tayloe Gwathmey, New York City.

Leper Escapes.—John Early, a leper, has escaped from Diamond Head Quarantine Station, near Port Townsend, Wash. His escape, says Surgeon-General Blue, demonstrates again the necessity of having a national leprosarium.

Examination Date Changed.—An official notice says that the next examination by the State Board of Health of Kentucky has been changed from June 3-5, 1914, to June 15-17, and will be held at the Hotel Henry Watterson, Louisville.

Pennsylvania Surgeons to Meet at Atlantic City.—The annual convention of the Association of Surgeons of the Pennsylvania Lines, East and West of Pittsburgh, will be held at St. Charles Hotel, Atlantic City, June 19 and 20. One of the chief topics of discussion will be the standardizing of methods of treating fractures in railway accidents.

Bequests and Donations.—The following bequests and donations have recently been announced:

Hospital for Deformities and Joint Diseases, New York City, $25,000; Presbyterian, Mount Vernon, and Episcopal hospitals, each $20,000, by the will of Mrs. A. Gertrude Cutter.

Cancer Hospital, and Little Sisters of the Poor, New York City, each $1,000, by the will of Mary F. Kennedy.

New York Foundling Hospital and St. Vincent's Hospital, New York City, each $2,160, by the will of Mary Guerin.

Federated Orthodox Jewish Charities, Chicago, a donation of $1,000 by Samuel Phillipson.

Albany (N. Y.) Medical College, $5,000, by the will of Sylvester McDonald.

FOREIGN

Measures for Suppressing Plague in Japan.—Surgeon B. W. Brown, U. S. P. H. S., on duty at Yokahama, in *Public Health Reports*, May 15, gives a full translation of the regulations adopted for the eradication of plague from the city. He says that during the epidemic of October and November, 1913, in spite of all efforts to stamp it out, twenty-one cases occurred and ninety-nine infected rats were found, and the infection spread to various parts of the city. Money and men were provided and the most thorough measures adopted, and Brown suggests the value of the report to American cities threatened with this infection.

Foot and Mouth Disease in Switzerland.—Consul David F. Wilbur of Zurich has reported that the live-stock and related industries of Switzerland have suffered greatly because of the foot-and-mouth disease, which was present in some of the cantons during the entire year. The cases began to increase and the disease to spread in June, and until the arrival of cold weather in December the ravages of the disease seemed practically uncheckable. It attacked not only cattle, but also to a less extent the hogs, sheep, goats, etc. To combat the spread of the disease the various cantons enacted decrees against neighboring cantons as well as against neighboring foreign countries, which regulated or prohibited the introduction of all live stock into their respective territories. In this way all traffic and trade in live stock was not only greatly hindered, but in some instances it was entirely forbidden.

Deaths in the Profession Abroad.—Bonner Harris Mumby, M.D., Aberdeen, 1881; for eighteen years medical superintendent of the borough asylum, Portsmouth, England; and a member of the Council of the British Medical Association; died suddenly in a motor car between Portsmouth and Southampton, April 29, from angina pectoris.——John Abercrombie, M.D., Cantab, 1880; F.R.C.P.Lond., 1886; consulting physician to Charing Cross Hospital and the Foundling Hospital, London; for several years editor of the Medical Times and Gazette; a specialist in diseases of children; died at his home in Brough, Westmoreland about April 30, from heart disease.——H. v. Wyss, privat-docent for internal medicine at the University of Zurich, aged 33. His publications on metabolism have been valuable. His latest research was on the development of edema under the influence of sodium bicarbonate and he had collected extensive data which he was able only partially to utilize.——A. Pasquale, professor of tropical pathology at the University of Naples and chief of the Scuola d'Igiene Navale and Scuola di Sanita marittima at that place.

CANADA

Floating Hospital.—A floating hospital on the St. Lawrence River is the plan for the reduction of infant mortality during the summer months. It will accommodate about 150 children at a time, and will be reserved for those actually sick. The age limit will be 5 years.

New Department of Analysis.—Montreal is creating a department of analysis. It will be entirely independent of the medical health department and will be a municipal chemical and bacteriology department, under the charge of Dr. Henri St. George, who has been in the employ of the city for eight years.

For Betterment of Health Department.—Dr. Séraphin Boucher, municipal health officer of Montreal, has asked for an appropriation of $5,000, to put the department on a more efficient basis. The plans include the appointment of more efficient sanitary and food inspectors, and the establishment of a civic laboratory, for the analysis of food and other commodities, by an efficient staff.

Physicians Resign.—Nine Montreal physicians have withdrawn from the Herzl Institute, a benevolent medical dispensary for the Jewish population of Montreal. Recently a new directorate was appointed, who immediately proceeded to appoint a new medical board or staff. The retiring staff threatens proceedings against the directorate for having illegally appointed a new staff contrary to the constitution of the institute.

Personal.—Dr. Samuel M. Henry has been elected mayor of Harrison, Ont.——Dr. James G. Scott, Seaforth, Ont., narrowly escaped death, May 17, when a locomotive struck a hind wheel of his buggy. He was hurrying to cross the track in front of the train.——Drs. Edward O. Steeves, Moncton, Francis J. Desmond, Newcastle, and F. S. Walker, St. John, have been reappointed members of the Board of Health of New Brunswick.——Dr. Walter H. Delaney, M.P.P., Quebec, has returned from Italy.——The physicians of Peterborough County, Ont., gave a dinner in Peterborough, May 14, in honor of Dr. Samuel Payne Ford, Norwood, in celebration of the semicentennial of Dr. Ford's entry into practice. Dr. James T. I. Halliday officiated as toastmaster.——Dr. Arthur W. Moody, Winnipeg, has been appointed chief surgeon of the Manitoba division of the Northern Pacific Railroad, vice Dr. Robert J. Blanchard, resigned.——Dr. Louis de L. Harwood, medical supervisor of the Notre Dame Hospital, Montreal, who was operated on in Paris recently, is reported to be convalescent.

CANAL ZONE

Removal of Tuberculosis Wards.—The tuberculosis and isolation wards on the Ancon Hospital reservation have been removed to La Boca and converted into dwellings. The residence of the governor of the zone will be located on the site of the tuberculosis wards. The isolation wards will be reerected on the site of the hospital garden.

Precautions against Plague.—During April the health officer of the Zone condemned 129 small one and two-story structures in Panama on account of their dilapidated condition and the opportunity afforded by them for harboring rats in the walls and under the floors. The building regulations of Panama require single walls and floors of cement or wood laid on cement. War on rats is being conducted daily and they are examined for plague. The presence of plague at Mantua, Ecuador, forty-eight hours from Panama, makes these operations important.

Quarantine Against Plague at Panama.—On May 20 the government authorities at Panama declared a seven-day quarantine against Colombia on account of bubonic plague which had appeared at several points in that republic. The exact extent of the outbreak is unknown. In connection with this report the comment has been made that the canal will have a great and wide influence on sanitation in countries not now giving sufficient attention to sanitary matters. The prohibition of the use of the canal by shipping from infected ports will induce the government of these countries to clean up.

LONDON LETTER

London, May 15, 1914.

The Clinical Congress of the Surgeons of North America

The program of the congress, which will take place in London from July 27 to August 1, is now completed. During each day members of the congress will be the guests of various hospitals and clinics, and will attend operations and demonstrations by well-known surgeons. The General Surgical Division will hold its meetings in the grand hall of the Hotel Cecil, and the Division of Surgical Specialties in the ballroom of the Savoy Hotel. The American surgeons will be welcomed by Mr. Page, American Ambassador. Dr. John B. Murphy will preside over the congress.

GENERAL SURGICAL DIVISION, GRAND HALL, HOTEL CECIL

Monday, July 27: Address of welcome by Sir R. J. Godlee, president of the Royal College of Surgeons; welcome to American surgeons by the American Ambassador, Mr. Page; address to retiring president, Dr. G. E. Brewer. Inauguration of the president, Dr. J. B. Murphy, and the vice-president, Dr. G. E. Armstrong. "The Choice of the Operative Method for Ulcer of the Stomach," A. von Eiselsberg, Vienna; discussion by Sir Watson Cheyne. Presidential address, "Arthrodesis and Bone Transplantation: Its Limitations and Technic," Dr. J. B. Murphy, Chicago.

Tuesday, July 28: "Cure of Hernia by Tissue Inlaying or Fascial Implantation," Dr. E. W. Andrews, Chicago; discussion by Mr. Lawrie McGavin. "Certain Derangements of the Knee-Joint and Their Treatment," Mr. R. Jones, Liverpool.

Wednesday, July 29: "Typhoid Perforation," Dr. G. E. Armstrong, Montreal; discussion by Sir Anthony Bowlby. "Transplantation of Ovaries," Professor Tuffier, Paris. "Primary and Late Results of Operations for Exophthalmic Goiter or Hyperthyroidism," Dr. Charles H. Mayo, Rochester, Minn.; discussion by Mr. James Berry.

Thursday, July 30: "The Principles of Non-Operative Treatment of Carcinoma," Dr. Krönig, Freiburg. "The Treatment of Inoperable Carcinoma of the Uterus by the Application of Heat," Dr. J. F. Percy, Illinois. "Radical Operative Treatment of Cancer of the Uterus," Mr. T. Wilson, Birmingham; discussion by Dr. T. Watts Eden, Mr. W. E. Miles, London, and Dr. J. C. Bloodgood, Baltimore.

Friday, July 31: "The Use of the Levator Ani Muscle and the Uterosacral Ligament in Prolapse Treatment," Dr. Henry Jellett, Dublin; discussion by Dr. Herbert Spencer. "Surgery of Intestinal Stasis," Dr. J. C. Bloodgood. "Intestinal Stasis," Sir W. Osler, Oxford; discussion by Sir Arbuthnot Lane.

SURGICAL SPECIALTIES, BALLROOM, SAVOY HOTEL

Tuesday, July 28: "The Results of Operations (Laryngofissure) for Cancer of the Larynx," E. Schmiegelow, Copenhagen; discussion by Sir St. Clair Thomson. "The Intranasal Surgery of the Lacrimal Apparatus, after an Experience with over 255 Operations," Dr. J. M. West, Berlin; discussion by Dr. D. R. Paterson, Cardiff.

Wednesday, July 29: "The Applicati [illegible] Mastoid Region and Its Use in the [illegible] Dr. A. Logan Turner, Edinburgh; dis [illegible] Scott. "Some Considerations Which [illegible] of an Operation in Septic Invasion of the Lateral Sinus," Mr. Hugh E. Jones, Liverpool; discussion by Mr. Hunter Tod.

Friday, July 31: "The Sclerocorneal Trephining Operation for Glaucoma," Lieut.-Col. R. H. Elliott, I. M. S., Madras: discussion by Mr. Treacher Collins. "Operative Procedure for Strabismus," Mr. F. Richardson Cross, Bristol; discussion by Mr. N. Bishop Harman. "Operation for Senile Cataract," Mr. J. B. Story, Dublin; discussion by Mr. Holmes Spicer.

The Membership of the British Medical Association

As explained in previous letters, a large accretion took place to the British Medical Association when the profession considered itself threatened by the national insurance act. In the year 1912 the number of new members was 2,500, producing an increase of membership of 1,267. At the end of the year the crisis came and the association attempted to prevent the working of the act, but failed. The profession was divided into two camps, "panel" and "antipanel," and as the latter formed the great majority of the members, the former considered that their interests could not be properly safeguarded by the association. This led to defection which was increased by raising the annual subscription from $6 to $8.50. The result was shown by the resignation of 2,675 members in 1913, causing a decrease of 2,192 in the membership of the association. In Ireland, where the conditions are peculiar, and medical benefit under the insurance act does not exist, the raising of the subscription was especially resented and the membership fell from about 1,000 to 756. It has also been felt that the association has not been of as much political use to Irish members, as its working has been adapted almost entirely to the very different conditions existing in England. An attempt has now been made to retrieve the position by establishing a separate office in Ireland with a whole-time medical secretary. As, however, an Irish Medical Association with a subscription of only $5 a year already exists for the same political purpose, it is very doubtful whether the Association will benefit either itself or the Irish profession by this new departure.

PARIS LETTER

Paris, May 8, 1914.

Personal

At its session, May 5, the Académie de médecine elected Dr. Routier, surgeon to the Necker Hospital, a member in the section of operative medicine, to fill the place left vacant by the lamented death of Dr. Lucas-Championnière. Dr. Routier is known especially for his numerous works on abdominal surgery and gynecology. It was he who in 1890 performed the first interval operation for appendicitis in France.

A Sanitary League against Rats and Flies

A *Ligue sanitaire française contre la mouche et le rat* has just been formed. It purposes the extermination, not only of flies and rats, but also of all disease-carrying vermin, and will institute a propaganda of education in hygiene and sanitation.

The Fight Against Alcoholism in Morocco

Since alcoholism has already begun its ravages in Morocco, the government of the protectorate has deemed it necessary, following the example of the Ivory Coast, to pursue the only really efficacious method: the absolute interdiction of absinthe to Europeans as well as to natives. A decree of the sultan has just been issued which formally prohibits the importation, manufacture, circulation, sale, or detention with a view to selling, of absinthe and similar products in the French portion of the country. Absinthe and similar products may not be made or sold except by pharmacists, under the classification of medicinal products. Every infraction of this decree is to be punished by a fine of from 300 to 3,000 francs ($60 to $600). For a repeated offense, the penalty is imprisonment for from three months to three years. Moreover, any public house in which the sale of absinthe and similar alcoholics is permitted will be closed for six months, aside from the penalty imposed on the proprietor. In case the offense is repeated, the establishment will be closed permanently.

BERLIN LETTER

Berlin, May 9, 1914.

Volunteer School Nurses for Berlin

In Berlin, as elsewhere, advice given to parents by school physicians is not always followed through carelessness, want of judgment or poverty. In many places school nurses have been instituted who take care that the orders of school physicians are followed. As Berlin has not yet installed school nurses, the Berlin Society for Domestic Sanitation will, by order of the city school deputation, establish a school-nurse service, at first in three school physicians' districts. This society has nine district committees in various parts of the city, which through many years' experience in detailed philanthropic work, are familiar with the conditions of the needy residents of their districts and can rely on trained volunteer assistance.

Annual Meeting of German Internists

At the *Kongress für innere Medizin,* which took place from April 21 to 23 at Wiesbaden under the presidency of the Munich clinician, Professor von Romberg, two topics excited the greatest interest, namely, the address of von Behring on his diphtheria prophylactic and the report by Werner of Heidelberg on radiotherapy of neoplasms of the internal organs.

BEHRING'S METHOD OF PROPHYLAXIS OF DIPHTHERIA

At the meeting last year, Behring announced his new prophylactic, which consists of a mixture of diphtheria toxin and antitoxin. From two to three thousand persons have been given the prophylactic, but exact painstaking observations have been made only on about one thousand. To Behring it seems a quite justifiable expectation that by regular and exact use of the T.-A. method, diphtheria may be made an exotic disease just as small-pox has become since the time of Jenner wherever vaccination has been carried out systematically and under the direction of expert physicians. To be sure, Behring admits that the scientific basis and the practical application do not as yet furnish sufficient guarantees for the fulfilment of this hope to its full extent in his lifetime.

In none of the single injections, which number about 7,000, has any harm been done. This results chiefly from the animal experimentation by which Behring secures positive evidence, first, that the preparation intended for the treatment of human beings contains not even a trace of the paralyzing element of the toxin, second, that the toxic power has been exactly determined by trial on guinea-pigs, and third, that especially in horses the capability of producing antitoxin has been learned to a certain degree of reliability. Further, Behring requires the testing of every new lot by his standard preparation M. M. 1, which has retained its toxic and immunizing properties for fifteen months unchanged.

In his first communication Behring could already report that in many cases such a dose of his remedy as is intended for the new-born would cause a marked reaction in older persons, especially in children of school age. An explanation of this fact may be found in the assumption of a specific sensitization in consequence of previous introduction of diphtheria bacilli which renders the individuals hypersensitive to the T.-A. For the great majority of cases, this must be regarded as correct, but in addition we have also a non-specific hypersusceptibility. This was in many cases extraordinarily great in tuberculous and scrofulous persons, in whom, in addition to the intense local reaction, an inclination to a painful swelling of the lymph-nodes appeared. Furthermore, among a large number of new-born and older infants, there were found some which reacted positively to as small doses as the schoolchildren among whom a second trial likewise was positive. Such cases deserve marked attention in reference to prophylactic vaccination against diphtheria because in them the positive reaction is not a sign of production of antitoxin in adequate amounts for protection against diphtheria.

For the purpose of a statistical investigation, intended to show the protective action of the new remedy, Behring would like, for the present, to have the lymphatic constitution and other similar conditions regarded as contra-indications for this method of prophylactic vaccination. He would also exclude from this treatment for the present atrophic infants and infants less than 9 months old.

The subcutaneous injection is recommended as the best method of application. There can be no doubt that, in many cases, a single injection produces a sufficient protection. Such persons are, as a rule, those who have been already sensitized by diphtheria bacilli. For the ordinary run of cases, at least two injections should be made. The first injection then plays the part of a sensitizer; sensitization, experience shows, occurs after from ten to fourteen days, which leads to the requirement that the second injection should not be made until after an interval of not less than ten days.

There are several preparations of T.-A.; T.-A. 8 has the lowest toxicity and has an equivalent value to that of the standard preparation M. M. 1, while T.-A. 7 is ten times and T.-A. 6, twenty times as strong in its toxic and immunizing power for man.

ANTITOXIN IN THE BLOOD

Systematic examination of the blood for antitoxin has shown a surprisingly large number of untreated cases in which the blood already contains antitoxin. Antitoxin could be demonstrated in the blood of not less than from 60 to 80 per cent. of the new-born. The children of the ages which furnish the greatest proportion of cases of diphtheria, however, more rarely show a positive reaction. The fear expressed by some that a protective remedy is not indicated in persons who are already under the influence of an imported diphtheria toxin has been finally dissipated by practical experience. Not one of the numerous bacillus-carriers that have been injected with T.-A. have sickened from diphtheria. Whether or not the active immunization with T.-A. will help them to get rid of the diphtheria bacilli is an open question.

VIENNA LETTER

Vienna, May 5, 1914.

The Program of Lectures for the Summer Term

The official program of the lectures for the coming term of the Medical Faculty of Vienna has recently been published. Primarily, the lectures and classes are arranged for the medical students and only a few of them are intended for doctors of medicine. The latter are expected to attend the postgraduate classes, notices of which are published from time to time. On application from a certain number of men (from six to eight) any one of the professors or lecturers will be willing to arrange a special class or course. The students' courses will number 429, lasting between sixteen and fifty hours each. They will comprise the whole field of medicine. Naturally, internal medicine (with ninety-eight different classes) and surgery (with forty-two classes) lead. The prominence of rhinolaryngology and otology is shown by the twenty-two classes on these subjects.. Anatomy, bacteriology and serology are not in such demand. A staff of 114 professors, eighty-five of whom are eminent, together with 133 docents and assistants, will direct the work.

The program contains also some figures as to the number of students in the last (winter) term. At the University of Vienna, from a total of 10,310 students, 3,018 were medical students, of whom 190 were women. The seven other universities of Austria had 31,397 students, of whom 7,330, or 23 per cent., were medical students. There were 320 female medical students, or a little over 4 per cent. of the total; 2,280 students, or 30 per cent., did not speak German.

The German constituent comprises 45 per cent. of the population of this country. It seems, therefore, that the other nations are attempting to make up for the previously wrong national distribution of qualified men. Within the last ten years the total number of medical students has risen from 18 to 30 per cent., and the increase of first-year medical students, against which there was such a bitter complaint, is due chiefly to this fact. It is also gratifying to learn that the number of foreign doctors attending the Vienna University is also increasing. Last term the number rose to 16 per cent.

The Third International Congress for Occupational Diseases

During September an international congress on occupational and industrial diseases will be held in Vienna. It will be associated with an exhibition which will illustrate the development and prevention of diseases caused by certain occupations and the influence of certain occupations on health and hygiene in general. The following subdivisions of the field to be covered have been made and the men named will speak on the subject: 1. "Fatigue," the physiology and pathology of labor on the nervous system, on the bones, static factors and night-work, Professor Durig, Vienna. 2. "Work in Moist and Hot Air," Professor Carozzi, Milan. 3. "Anthrax," Professor Schattenfroh, Vienna. 4. "Pneumoconiosis," Prof. L. Devoto, Milan. 5. "Injuries by Electricity in Industries," Professor Langlois, Paris. 6. "Industrial Poisons," Professor Lehman, Wurzburg. (This will also include the commercial handling of poisons in large quantities.) 7. "Injuries to the Auditory Nerves by Occupations." Several will speak on this subject.

In connection with the congress, excursions will be conducted to the large industrial establishments in which the modern equipments for the prevention of industrial injuries will be studied, including trips to the mines, and paraffin and kerosene wells.

Health of Vienna in the First Quarter of This Year

The official monthly report for March of the Board of Health includes the facts of the two preceding months. Thus, the year 1914 has been extremely favorable in the mortality and morbidity rates from infectious diseases. A marked drop is noted, especially in scarlet fever and diphtheria, while the foggy weather of February has been characterized, contrary to expectation, by constant temperature and low morbidity. The mortality is now below 15 per cent., the yearly average being 16.2 per cent. The infant mortality is still high, causing 21 per cent. of total deaths, while senility causes 3 per cent. of deaths.

Marriages

William Emery Harrington, M.D., Waukita, Okla., to Miss Evelyn Epperson, in Enid, Okla., recently.

Sydney Smith Carrier, M.D., Pittsburgh, Pa., to Miss Lillian Simrall Hunter of Louisville, Ky., May 14.

Edmund W. Meisenhelder, Jr., M.D., to Miss Francis Foust, both of York, Pa., in Harrisburg, May 9.

William Mecklenburg Polk, M.D., to Miss Maria H. Dehon, both of New York City, May 12.

Franklin Herbert Sisler, M.D., to Miss Blanche Virginia Deitrick, both of Sun, W. Va., May 13.

P. A. Surg. Edward Urbane Reed, U. S. N., to Miss Nellie Hall Bayles of Denver, Colo., May 12.

Elijah A. Lambert, M.D., Denton, Ga., to Miss Mary Lawrence of Ashburn, Ga., April 30.

Andre William Reggio, M.D., to Miss Marian Shaw Lovering, both of Boston, recently.

Frank B. Sorgatz, M.D., to Miss Vera Van Winkle, both of Oklahoma City, Okla., May 3.

Waverly Daniel Bretz, M.D., to Miss Vera Canz, both of Memphis, Tenn., May 8.

Deaths

Niles Theodore Quales, M.D. Rush Medical College, 1866; a Fellow of the American Medical Association; and Nestor of the Scandinavian physicians of the Northwest; died at his home in Chicago, May 23, from pneumonia, aged 83. He was born in Hardanger, Norway; had his preliminary education in Norway and Denmark, and in 1859 came to Chicago. On the outbreak of the Civil War, he enlisted; and at its conclusion entered Rush Medical College. He was first intern in the old Cook County Hospital; and during the small-pox epidemic of 1868-1870, he was city physician and director of the small-pox hospital then located near the lake on North Avenue. He was also in charge of the United States Marine Hospital until the Chicago fire of 1871. In 1894 he was made president of the Scandinavian-American Medical Society; and in 1910 was honored by King Haakon of Norway with the Order of Saint Olaf. He was the founder of the Norwegian Old People's Home, Norwood Park; and was always prominent in charitable work among the Scandinavians of the city. At his funeral, May 26, members of the Scandinavian-American Medical Society officiated as pallbearers.

Julia Dyer Merrill, M.D. Northwestern University Women's Medical School, Chicago, 1895; formerly superintendent of nurses in the North Adams, Mass., Training School; and after her graduation in medicine, assistant to Dr. A. C. Cotton, Chicago, for several years; assistant clinical professor of pediatrics in Rush Medical College from 1897 to 1913; and a member of the pediatric staff of Presbyterian, Tabitha, Chicago Maternity, Maimonides and Mary Thompson hospitals; and deeply interested in various orphanages, sanatoriums for babies, and other infant welfare organizations; a member of the Chicago Milk Commission from its inception until 1913; a Fellow of the American Medical Association; died at her home in Chicago, May 17, from infectious endocarditis complicated with pneumonia, aged 53.

Charles Enfield, M.D. College of Physicians and Surgeons in the City of New York, 1870; a Fellow of the American Medical Association and American Academy of Ophthalmology and Laryngology; a member of the American Association for the Advancement of Science, and the American Association of Railway Surgeons; a veteran of the Civil War, in which he served in the Hospital Corps of the First New York Volunteer Infantry; a practitioner of Jefferson, Iowa, since 1871; died at his home in that place, May 7, from pneumonia, aged 71.

Thomas Mackaness Ludlow Chrystie, M.D. Bellevue Hospital Medical College, 1867; a member of the Medical Society of the State of New York; an ensign in the Navy during the Civil War; for many years a practitioner of New York City, and for quarter of a century physician to the New York State Branch of the Order of the Cincinnati; died at his home in Rye, N. Y., May 19, aged 72.

Carl Robert Feld, M.D. Rush Medical College, 1891; a Fellow of the American Medical Association, and secretary of the Jefferson County (Wis.) Medical Society, since its organization; for twenty years clerk of the Board of Education of Watertown, Wis.; a member of the state legislature in 1885, 1887 and 1889; for nearly twenty years health commissioner of Watertown and the township of Lebanon; died at his home in Watertown, May 12, from diabetes, aged 55.

Gustavus Brown Thornton, M.D. New York University, New York City, 1860; a Fellow of the American Medical Association; regimental, brigade and division surgeon in the Confederate service throughout the Civil War; local surgeon of the Memphis Division and Terminal, Illinois Central and *Southern Railway; for many years superintendent of the* Memphis City Hospital, and president of the Board of Health of the city, died May 13, aged 79.

Henry Clay Devilbiss, M.D. College of Physicians, Baltimore, Md., 1877; a Fellow of the American Medical Association; formerly president of the Medical Society of Franklin County, Pa.; treasurer of the Cumberland Valley Medical Association; and since its organization, a member of the medical staff of the Chambersburg Hospital; died at his home in Chambersburg, Pa., May 17, aged 65.

J. K. Robinson, a non-graduate of Randolph County, Mo., who practiced for a year under his preceptor, and then became a clergyman; died at his home in Clark, Mo., March 23, from endocarditis, following influenza, aged 70.

Robert Hughes Hayes, M.D. Washington University Medical School, St. Louis, 1879; a member of the Medical Association of the State of Alabama; died at his home in Union Springs, Ala., May 3, from heart disease, aged 56.

John McCroskery, M.D. Bellevue Hospital Medical College, 1887; a Fellow of the American Medical Association; of New York City; died suddenly from heart disease while making a professional call, May 9; aged 49.

William Francis Gleason, M.D. Harvard Medical School, 1886; a member of the Rhode Island Medical Society; formerly chairman of the school committee of Providence; died at his home in that city, April 29, aged 52.

Philander Palmer (license, Michigan, twenty-four years of practice, 1900) a veteran of the Civil War; one of the oldest practitioners of Grand Haven, Mich.; died at the home of his son in that city, May 4, aged 77.

David Alexander Ryan, M.D. Dearborn Medical College, Chicago, 1906; formerly a member of the staff of the German Hospital; died at his home in Chicago, May 15, from a nervous breakdown, aged 55.

James W. La Force, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1856; a pioneer practitioner of Eldon and Floris, Iowa; died at the home of his daughter in Bloomfield, Iowa, May 4, aged 87.

James F. Keith, M.D. Missouri Medical College, St. Louis, 1871; president of the Citizens' Bank of Sturgeon, Mo.; died in a hospital in St. Louis, about April 30, from disease of the bladder, aged 64.

Hiram O. King, M.D. Detroit Medical College, 1876; a member of the Indiana State Medical Association; died at his home in Kendallville, Ind., May 5, from disease of the spinal cord, aged 62.

Robert King, M.D. New York Homeopathic Medical College, 1863; for thirty years a practitioner of Emporia, Kan.; died at his home in that city, May 2, from malignant disease, aged 74.

Ira Young Kezartee, M.D. University of Michigan, Ann Arbor, 1867; for twenty-two years a practitioner of Battle Creek, Mich.; died at his home in that city, May 4, aged 69.

John Alvin Graham, M.D. Western Pennsylvania Medical College, Pittsburgh, 1890; died at his home in West End, Pittsburgh, May 1, from disease of the stomach, aged 47.

Thomas Harding Ellis, M.D. Medical College of Virginia, Richmond, 1884; formerly of Montebello, Va.; died at his home in Glenwood, N. C., March 25, aged 51.

Alonzo N. Sheffner, M.D. Bennett Medical College, Chicago, 1873; a veteran of the Civil War; died at his home in Hay Springs, Neb., April 30, aged 73.

Mary C. Farnham, M.D. Hahnemann Medical College, Chicago, 1881; died at her home in Denver, Colo., May 2 from pleuropneumonia, aged 71.

Phillip Heldrich, M.D. University of Maryland, Baltimore, 1883; formerly of Elmira, N. Y.; died at his home in Baltimore, May 1.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

LIQUID PETROLATUM OR "RUSSIAN MINERAL OIL"

Report of the Council on Pharmacy and Chemistry

The following report was submitted to the Council by a referee and its publication authorized by the Council.

W. A. Puckner, Secretary.

Petroleum has been in use as a medicine from time immemorial. It was known to Herodotus 400 years before Christ and is mentioned by Plutarch, Dioscorides, Pliny and other early writers. It was extensively used by the Arabians and evidently played an important part in the practice of medicine in India, being known to the Bengalese as Muthe Katel. The raw product was the substance used in earlier times and differed much in character and composition, as obtained from different sources.

As an internal remedy it was early employed in chronic pulmonary affections, in obstinate skin diseases, in rheumatism, and for the expelling of tapeworms. It was extensively used for these several purposes in France under the name of "Oleum Gabianum" and in North America as "Seneka oil."

The internal use of the refined product may be traced to a patent granted to Robert A. Chesebrough of New York, in June, 1872, for the manufacture of a "new and useful product from petroleum, named vaseline." This name was originally applied only to a semisolid preparation, but later a liquid product known as liquid vaseline was marketed and for a time exploited as a cure for coughs, colds, consumption and a number of other diseases and conditions.

The liquid petrolatum has since become known under a variety of names, proprietary and otherwise, in addition to being used as a substitute or an adulterant for other, more costly, fats and oils. Some of the names applied to the product are:

Adepsine oil
Amilee
Atoleine
Atolin
Blandine
Crysmalin
Deeline
Glyco
Glycoline
Glymol
Heavy petroleum oil
Liquid Albolene
Liquid Cosmoline
Liquid Fossiline
Liquid Geoline
Liquid Paraffin
Liquid Petrolatum
Liquid Saxoline
Liquid Vaseline
Mineral Glycerin
Mineral Oil
Neutralol
Olo
Paraffin Oil
Paroline
Petralol
Petro
Petrolax
Petrolia
Petronol
Petrosio
Rock Oil
Russian liquid petrolatum
Russian mineral oil
Russian paraffin oil
Russol
Saxol
Terraline
Terralbolia
Usoline
Water-white mineral oil
White paraffin oil.

A preparation similar to that official in the Pharmacopeia of the United States as liquid petrolatum has been included in many, if not all, of the foreign pharmacopeias, the official titles under which this preparation is recognized being as follows:

Petrolatum Liquidum, U. S. Pharmacopeia; Paraffinum Liquidum, pharmacopeias of Great Britain, Germany, the Netherlands, Japan, Belgium, Austria, Denmark, Switzerland, Sweden, Servia, Italy, Hungary and Russia; Oleum Paraffinae, Spanish Pharmacopeia; Vaselinum Liquidum, French Pharmacopeia, and Oleum Vaselini (as a synonym) pharmacopeias of Denmark and Russia.

The requirements of the several pharmacopeias differ somewhat and the specific gravity as given is as follows:

U. S. P. VIII, 1905	0.870	to	0.940	at 25°
Ph. Brit. IV, 1895	0.885	to	0.890	at 15.5°
B. P. C. II, 1911, usually	0.875	or	lower	at 15°
Ph. Germ. V, 1910, at least	0.885			at 15°
Ph. Ross. VI, 1910	0.880	to	0.885	at 15°
Ph. Hung. III, 1909	0.88	to	0.89	at 15°
Ph. Ital. III, 1909	0.875	to	0.890	at 15°
Ph. Fr. V, 1908, about	0.875			at 15°
Ph. Serb. II, 1908, about	0.880			at 15°
Ph. Svec. IX, 1908	0.88	to	0.90	at 15°
Ph. Helv. IV, 1907	0.880	to	0.885	at 15°
Ph. Dan. VII, 1907, at least	0.880			at 15°
Ph. Austr. VIII, 1906, at least	0.880			at 15°
Ph. Belg. III, 1906, not below	0.880			at 15°
Ph. Japon. III, 1906	0.875	to	0.945	at 15°
Ph. Ndl. IV, 1905, not below	0.860			at 15°
Ph. Hisp. VII, 1905	0.840			at 15°

For pharmaceutical purposes, liquid petrolatum may be divided into two grades, the lighter or more limpid oil, used extensively as a vehicle for oil sprays, and the heavier, more viscid oil generally recognized in European pharmacopeias and used as an ingredient of ointments and more recently as a remedy in the treatment of intestinal stasis.

Under petrolatum liquidum the U. S. P. recognizes a mixture of hydrocarbons, chiefly of the methane series, which occurs as a colorless or very slightly yellowish, oily, transparent liquid without odor or taste and having a specific gravity of about 0.870 to 0.940 at 25 C. For the U. S. P. IX, it is proposed to change this requirement somewhat so as to have it apply to a transparent liquid free from fluorescence, without odor or taste and having a specific gravity of from 0.845 to 0.940 at 25 C.

Such a requirement would include all of the available paraffin oils irrespective of origin. The now commonly available commercial liquid petrolatum, used for pharmaceutical purposes, is practically colorless and all of the better grades are free from odor or taste. The specific gravity varies from 0.855 to 0.895. The lighter oils, having a specific gravity of from 0.860 to 0.870, are usually preferred in the making of oil sprays or solutions of substances to be used as local applications. The product having a specific gravity above 0.875 evidently contains a considerable amount of dissolved solid paraffin which separates out at temperatures at or below 0 C., but readily dissolves again at temperatures above 10 C.

There is considerable difference in the chemical composition of the paraffin oils obtained from various sources. The American oil consists largely of hydrocarbons of the methane series, while the Russian oil contains naphthenes or hydrocarbons of the benzene series, having the empirical composition of ethylene, (C_nH_{2n}) which may be considered as hydrogenated aromatic hydrocarbons, though they behave with reagents very much in the same way as do the hydrocarbons of the methane series.

Mineral oils with a naphthene base are best suited for making white petrolatum, and at the present time the production of the colorless water-white liquid petrolatum appears to be confined largely or almost exclusively to the crude product of the Baku district of Russia, though it is asserted that it is now also made from the Hanover (Germany) crude oil and that some is being produced by "cracking" the white solid paraffin.

It is also said that the American oil can be made water white but that it is not being so produced at present for economic reasons; the yellowish oil, free from fluorescence, having a very wide sale, both as a lubricant and as a substitute for lard oil and other of the more costly lubricating oils.

From a pharmaceutical point of view it would appear important to note the physical characteristics of the oil and to insist on absence of color, absence of odor and taste, absence of acid and of alkali and a specific gravity in harmony with the purposes for which the oil is to be used.

During the past year or two liquid petrolatum has attracted considerable attention as a remedy in the treatment of intestinal stasis or chronic constipation, the practice of using it having been developed largely through its recommendation by Sir W. Arbuthnot Lane and his associates. This use of liquid petrolatum and of petrolatum products generally is by no means novel. N. A. Randolph[1] of Philadelphia, was among the first to suggest its use for this purpose in an article published in 1885. Randolph also appears to have been the first to experiment with petrolatum and to determine its non-absorbability from the intestinal tract. In an article[2] in 1884 he concludes that "pure petrolatum while entirely unirritating to the digestive tract is valueless as a *foodstuff*."

The experiments recorded by Randolph were evidently prompted by the fact that vaseline and a number of imitation products then on the market were being sold as substitutes for lard and butter, and opinions regarding the food value of petroleum products appear to have differed very materially. Following the experiments of Randolph, Robert Hutchison in 1899 made a series of experiments to demonstrate that petroleum, petrolatum, paraffin and related products were absolutely unassailable by any of the digestive fluids, despite the "large vogue that had of late years been given to various petroleum emulsions, chiefly by ingenious and unterrified advertising." He came to practically the same conclusions arrived at by Randolph fifteen years earlier and pointed out that "liquid paraffin in one sense may be regarded as an artificial intestinal mucus and might in that way have some value on certain forms of constipation."

William Duffield Robinson[3] reports on the use of a perfectly refined colorless and odorless petrolatum, supposedly of American origin. He was able to show that all of the product passed unchanged through the intestinal tract and could be regained from the feces. In his conclusions he expressed the belief that the effect of the administration of these petroleum products is far more than as a simple intestinal lubricant. In over fifty selected cases in which nutrition, digestion and body-weight were impaired, and the purest oil administered in 1- or 2-dram doses each day for a period of from four to six months, there was in every instance an improvement of weight, health and feeling of well-being. The administration of refined paraffin oil gave no discomfort in any instance, even in cases in which nearly a pint was given in a few hours.

William Ewart[4] suggests liquid paraffin as a safe agent for the local treatment of the lesions in typhoid fever. He says in part: "Mineral oil, such as petrolatum or paraffin, is neither absorbed nor dissolved; therefore, after all absorbable ingestions are taken up by the lacteals, it will still remain in the bowel. In this way pure liquid paraffin is valuable, precisely because it is inert; moreover, it might some day, perhaps, be made the vehicle for effective topical remedies."

A. D. Schmidt[5] quotes Stubenrath as having given liquid paraffin in the treatment of chronic constipation, and he himself gave as much as 20 gm. of liquid paraffin to adults without observing any injurious effect whatever. He says, "As a result of the administration of liquid paraffin, the feces are softened considerably and are found under the microscope to contain numerous minute globules of paraffin." He was, however, unable to recover from the feces the entire quantity of paraffin administered and believes that a certain portion of it, probably the fractions with a low boiling-point, are absorbed or possibly oxidized in the organism.

Maurice Vejux Tyrode[6] also refers to the use of liquid petroleum in the treatment of constipation.

Sir W. Arbuthnot Lane in his recommendations of liquid petrolatum calls it an ideal remedy for stasis, but cautions against the use of the lighter oil as extensively prescribed in this country as a vehicle for sprays in nose and throat work.

Paraffin oil is not absorbed from the alimentary tract and so far as known exerts no deleterious influence. It is usually given in quantities of from 10 to 20 c.c. half an hour or an hour before meals or in larger doses, from 30 to 50 c.c., at one time on retiring. From available evidence it appears that comparatively huge doses may be administered without the production of any untoward results. According to many observers, liquid paraffin should not be given with or after meals because of the inhibiting influence that it may have on the digestion of food. It is not soluble in water or the ordinary solvents and therefore cannot be diluted. The denser oils are preferably slightly warmed or drunk with warm water so as to obviate the disagreeable slimy sensation that persists when taken cold.

Volatile oils may be used in moderate amounts to give a distinctive taste to the otherwise rather insipidly tasteless paraffin oil. Among the more desirable oils to be used for this purpose would be oil of peppermint, oil of cinnamon, oil of betula or methyl salicylate and oil of cloves. From 2 to 10 drops of any of these oils can be added to a pint of the oil. When larger doses of the oil are to be given at one time, it would, of course, be advisable to use a comparatively smaller quantity of the volatile oil as a flavor.[7]

From the foregoing it would appear that apart from the Pharmacopeia of the United States, practically all other known pharmacopeias describe a water-white mineral oil under the title "Paraffinum Liquidum" or "Liquid Paraffin" as a colorless, odorless, tasteless, non-fluorescent, oily liquid, free from acids, alkalies and organic impurities. As explained before, the specific gravity of the preparation as recognized in other countries and as offered on the American market at the present time varies considerably, and there appears to be some difference of opinion as to the exact nature of the product that is preferable for use for different purposes. This matter requires further investigation.

Since the definition of liquid petrolatum in the U. S. Pharmacopeia permits the use of fluorescent products of widely varying specific gravities, it is recommended that physicians who desire the water-white non-fluorescent (Russian) mineral oil should use the term "Petrolatum Liquidum, Grave," or "Paraffinum Liquidum, B. P.," if the heavy product recommended by Lane is desired, and "Petrolatum Liquidum, Leve" if the light varieties are required. It is further recommended that under the foregoing names, manufacturers and pharmacists be requested to dispense the products, in accordance with the following descriptions:

Petrolatum Liquidum, Grave.—Heavy (Russian) Liquid *Petrolatum.—Paraffinum Liquidum, B. P., liquid paraffin.*—A transparent, colorless, tasteless, non-fluorescent, oily liquid, odorless when cold but giving off a faint petroleum odor on heating. This preparation should correspond to the requirements of the British Pharmacopeia for liquid paraffin and have a specific gravity of about 0.885 to 0.890 at 15 C. It is insoluble in water or alcohol but soluble in boiling absolute alcohol and readily soluble in ether, chloroform, carbon disulphide, petroleum benzin, benzene and fixed and volatile oils. It serves as a solvent for volatile oils and related substances like camphor, menthol and thymol.

This is the type of preparation used by Sir W. Arbuthnot Lane, and his associates for internal administration. It is also used as a basis for ointments and salves and as a local application to wounds, ulcers and in certain forms of skin diseases in which a simple protective is desired.

Petrolatum Liquidum, Leve.—Light (Russian)—Liquid Petrolatum.—A transparent, colorless, tasteless, non-fluorescent, oily liquid, odorless when cold, but giving off a faint petroleum odor on heating. In other respects this preparation should correspond to the pharmacopeial tests for liquid petrolatum and have a specific gravity of about 0.860 to 0.875 at 15 C. Like the heavy variety of liquid petrolatum, it is insoluble in water and alcohol, but soluble in boiling absolute alcohol and readily soluble in ether, chloroform, carbon disulphide, petroleum benzin, benzene and fixed and volatile oils. It serves as a solvent for volatile oils and related substances like camphor, menthol and thymol.

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[1] Randolph, N. A.: Therap. Gaz., 1885, ix, 732.

[2] Randolph, N. A.: Proc. Acad. Nat. Sc., Philadelphia, 1884, p. 281.

[3] Robinson: William Duffield: Med. News, 1900, lxxvii, 56.

[4] Ewart, William: Brit. Med. Jour., 1902, ii, 1505.

[5] Schmidt, A. D.: München. med. Wchnschr., 1905, lii, 1970.

[6] Tyrode, Maurice Vejux: Boston Med. and Surg. Jour., 1910, clxii, 673.

[7] In addition to the articles referred to in the preceding footnotes, the following are of interest in connection with this subject:
Editorial, Therap. Gaz., 1885, ix, 353.
Junker, F. A.: Med. Record, London, 1885, xiii, 506.
Editorial, Med. News, 1886, xlviii, 105.
Dunbar: Deutsch. med Wchnschr., 1896, xxii, 33.
Stubenrath, Franz Casimir: München. med. Wchnschr., 1897, xliv, 639.
London Letter, Med. News, 1899, lxxiv, 504.
Hutchison, Robert: Brit. Med. Jour., 1899, i, 724.
Schlesinger, E. G.: Boston Med. and Surg. Jour., 1913, clxix, 14.
Lane, W. Arbuthnot: Brit. Med. Jour. 1913, ii, 1126; Proc. Roy. Soc. Med., 1913, vi, 49; Surg. Gynec. and Obst., 1913, xvi, No. 6.
Jordan, Alfred C.: Practitioner, London, February, 1913.
Chrysospathes, J. G.: Zentralbl. f. Chir., 1913, No. 45; abstr., The Journal A. M. A., Dec. 13, 1913, p. 2201.

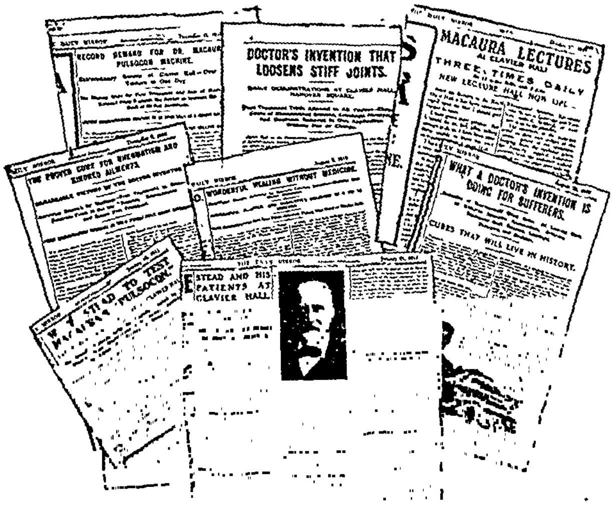
This is a type of preparation extensively used as a vehicle for the oily sprays in nose and throat work. It is also being used as one of the constituents in the now popular paraffin oil cold cream and has been used to some extent for internal administration in the treatment of chronic stasis. Being more limpid than the preparation preferred by Lane, it is more readily taken, though greater care must be exercised in securing a sample devoid of the lighter fractions of petroleum distillates.

GERALD MACAURA—INTERNATIONAL QUACK

An American Impostor who Defrauded the British with Impunity but was Unappreciated by the Germans and French

Gerald Macaura is a quack of international notoriety who calls himself "doctor" and claims to be a graduate of the National Medical University of Chicago. The official list of the alumni of the National Medical University of Chicago does not contain Macaura's name. Even if it did, Macaura would have nothing to brag about, for the National Medical University, now defunct, was an institution of the sun-down variety whose reputation was so unsavory that it was not recognized by the authorities of the very state in which it did business.

Gerald Macaura calls himself a "vibrotherapist." In 1904 he was in Baltimore. About a year later he transferred his activities to Dublin, Ireland, where in partnership with another quack, one Dick Sorelle, he conducted a medical institute under the title the "American Doctors." Like other quacks—medical and otherwise—he commercialized his country's emblem by floating the Stars and Stripes above his fakery. In those days, it seems, Macaura had not started his vibrotherapy fraud, but was relieving the gullible of their money *via* the "electric treatment" route.



RECORD DEMAND FOR DR. MACAUR
PULSOCON MACHINE.

DOCTOR'S INVENTION THAT LOOSENS STIFF JOINTS.

MACAURA LECTURES
AT CLAVIER HALL
THREE TIMES DAILY
NEW LECTURE HALL NOW OPE

THE PROVED CURE FOR RHEUMATISM AND KINDRED AILMENTS.

WONDERFUL HEALING WITHOUT MEDICINE.

WHAT A DOCTOR'S INVENTION IS DOING FOR SUFFERERS.

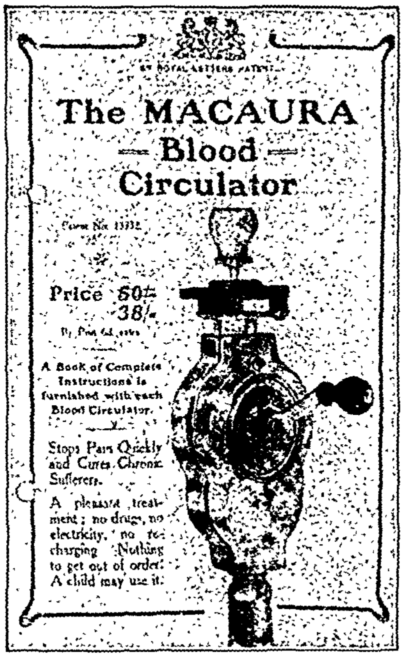
CURES THAT WILL LIVE IN HISTORY.

W. T. STEAD TO TEST MACAURA'S PULSOCON.

STEAD AND HIS PATIENTS AT CLAVIER HALL.

Greatly reduced reproduction of some of the advertisements run by Macaura in the London newspapers during his campaign in that city. Note the way in which the late editor of the English *Review of Reviews* was made an advertising asset by this quack. Macaura opened his advertising campaign by hiring the Royal Albert Hall, later he used *Clavier Hall.*

In 1908 Macaura crossed the Irish channel and opened another "institute" in Manchester, England. It was at this time that he brought out his "blood circulator" which, he assured his dupes, was "Protected by His Majesty's Royal Letter Patent." The "blood circulator" he first christened the "Pulsator," but later changed its name to the "Pulsocon." Finding the English so naively gullible Macaura soon decided that Manchester offered too small a field for his talents, and in 1910 went to London. It was here that he gave full play to his advertising genius—for the swindler undoubtedly has genius in this line. He rented the Albert Hall, one of the largest auditoriums in London, and opened his campaign with a two-night "show" that was widely advertised in the London newspapers. Macaura spent tens of thousands of pounds on newspaper advertisements.



BY ROYAL LETTERS PATENT.

The MACAURA
Blood
Circulator

Patent No. 13332

Price 60/-
38/-
By Post 6d. extra

A Book of Complete Instructions is furnished with each Blood Circulator.

Stops Pain Quickly and Cures Chronic Sufferers.

A pleasant treatment; no drugs, no electricity, no recharging. Nothing to get out of order. A child may use it.

Photographic reproduction of the back cover of Macaura's booklet showing the vibration device sold in England under the name "Pulsocon" and in the United States as the "Cirkulon."

As a master-stroke of advertising, Macaura was able to interest the late W. T. Stead in his faking and page after page of the London papers were filled with Macaura's blatant advertisements in which Stead's name was capitalized and used as a huge advertising asset. Mr. Stead was undoubtedly honest in his belief that Macaura had something of value in his widely heralded treatment. In this instance, as in some others equally well known, the late editor of the English *Review of Reviews* showed a sincerity of purpose that was exceeded only by his appalling lack of judgment on things medical. A few years before, Mr. Stead had advocated the notorious Count Mattei "cancer cure" which investigation showed to consist of nothing but water; later, he came to the support of an equally worthless cure for cancer—violet leaves; then it was Macaura's "Pulsocon." Needless to say, Macaura took full advantage of the publicity given him by his champion, Mr. Stead, and he reaped a golden harvest. Needless to say, too, when Mr. Stead finally admitted the worthlessness of Macaura's "treatment" the publicity given this admission was practically *nil.*

How beautifully Macaura worked the British public can be gathered from the following incident. One of the cheaper evening London papers in the summer of 1910 contained this news item:

> WELL-KNOWN DOCTOR'S CHAUFFEUR FINED
>
> At Beaconsfield Police Court yesterday the chauffeur employed by Dr. Gerald Macaura, inventor of the Macaura machine, was fined £5 and £3 8s 6d costs for exceeding the speed limit.
>
> Dr. Macaura explained that he was behind with his appointments with several important patients, and was at the time on his way to the residence of the Earl and Countess Roberts at Ascot.

Eight guineas and six pence is certainly dirt cheap for such a magnificent puff. What plebeian cockney, with "a sneaking liking for a lord," could withstand the subtle suggestion that by purchasing one of Macaura's "Pulsocons" he would be able to obtain the same "treatment" as that given to Earl Roberts?

In time, as in all such cases, the British realized what Macaura was, and his blatant and mendacious advertising was insufficient to overcome the counter-force of the knowledge of his inefficiency and fraud. Then in the autumn of 1911 the quack announced that he was coming back to the United States. At the time, THE JOURNAL[1] felicitated London on being well-rid of a most undesirable citizen. For some reason Macaura changed his mind and instead of returning to the United States transferred his fraudulent operations to the continent. In Germany he found a paternalistic government that interfered with his swindle, and in the latter months of 1912 the newspapers announced that Macaura was expelled from Prussian State Territory on the charge of "attempt to cheat." In Paris he fared even worse, although he found several Parisian papers that were willing to share in the fraud money he obtained from the sick. The public prosecutor accused Macaura of illegal practice of medicine and the quack was arrested on the charge of swindling. The case was decided a few days ago when, according to the Associated Press reports, Gerald Macaura was sentenced to three years' imprisonment and a fine of $600 on a charge of fraud.

AILY MIRROR Page 15

DR. MACAURA, F.R.S.A.,

Late member of the Royal Institute of Public Health, London, and graduate of the National Medical University of Chicago. Dr. Macaura successfully demonstrated on Thursday and Friday on test patients submitted by Mr. Stead at Clavier Hall to huge and fashionable audiences. The treatments, it is understood, were entirely satisfactory to Mr. Stead and his physicians

One of Macaura's advertisements appearing in the London *Daily Mirror*. Notice his claim to have been graduated by the National Medical University of Chicago. The official list of the alumni of the National Medical University does not give Macaura's name. If it did Macaura would have nothing to be proud of as this "university" was a night school not recognized by the Illinois authorities.

After Macaura has served "time" he will probably return to the United States, where he may feel tolerably safe in conducting his quackish operations, provided he does not come in conflict with the federal laws. In fact, the device by which he has swindled so many thousands, has come to the United States ahead of its self-styled inventor. In this country it is not sold as the "Pulsocon" but as the "Cirkulon." The "Cirkulon" is exploited by the Cirkulon Institute, 1109 Grand Avenue, Kansas City, Mo. In Great Britain Macaura's device sold for 38 shillings (about $9.50). When purchased in Kansas City, however, $15 is the price. At present the "Cirkulon" is not being pushed extensively. We may expect three years hence, when its "inventor" is able to put aside his convict's suit and again don civilian garb that an energetic campaign will be started. So long as gullibility remains rampant—so long will swindlers of the Macaura type flourish.

Association News

"MEMBERSHIP" AND "FELLOWSHIP" DEFINED

Members Must Qualify as Fellows to Participate in Scientific Assembly at Annual Session

In order that the distinction between membership and Fellowship in the Association shall be fully understood, attention is called to the following excerpts from the By-Laws:

> MEMBERS.—The members in good standing of the constituent state and territorial medical associations of the American Medical Association shall be members (Sec. 1, Chap. VIII).
>
> FELLOWS, ASSOCIATE FELLOWS, HONORARY FELLOWS.—Any member of this Association, who on the prescribed form shall apply for Fellowship and subscribe for THE JOURNAL, paying the annual dues for the current year, shall be a Fellow.
>
> Commissioned medical officers of the United States Army, United States Navy and the United States Public Health Service shall be Fellows of this Association so long as they are engaged actively in their respective service, and thereafter if they have been retired on account of age or physical disability. These Fellows shall not be required to pay dues and shall not receive THE JOURNAL of the American Medical Association except by personal subscription.
>
> There shall be associate and honorary Fellows who shall be elected and shall qualify in accordance with the provisions set forth in these By-Laws.
>
> Members, associate members and honorary members of this Association at the time of the adoption of this By-Law shall be respectively Fellows, associate Fellows and honorary Fellows; and in interpreting these By-Laws, "membership" in the Association at the time of the adoption of this By-Law shall be construed as Fellowship (Sec. 4, Chap. VIII).

As is clearly indicated, the relationship of the individual to the organization is in no wise changed from what it was prior to the 1913 session. The only change is that those who were formerly called "members" are now termed "Fellows." As indicated in the following quotation from the By-Laws, Fellows, in contradistinction to those now holding membership only, are entitled to register at the annual session of the Association:

> None but Fellows, associate Fellows, honorary Fellows and invited guests shall be allowed to register or take part in the scientific meetings of the Association.
>
> No Fellow shall be eligible to register at an annual session until he has paid all of his current indebtedness.
>
> No Fellow shall take part in the proceedings of the Association, or of any of the sections, until he has registered his name and address in the registration office (Chap. IX).

Correspondence

How the Eugenic Marriage-Law Works Out

To the Editor:—A great deal has been written on this much-mooted question, but this is probably the first report of the practical working out of the law in two specific cases—specific, both in the practical working out of the law, and specific pathologically and I might say psychopathically.

CASE 1.—A man about 36 years of age came to me, April 17, and told me he was about to be married and wanted me to examine him and sign his marriage certificate.

On my refusal to sign his certificate without his having taken a Wassermann test, he went to one of a group of physicians connected with a certain maternity hospital, who had sent out word to the public through the press that they would sign marriage certificates without the applicant having to take a Wassermann test. Anyway, one of these physicians signed his certificate, evidently without much energy wasted in a physical examination, and took his three dollars, which is the fee established by the eugenic law. I say "without much energy wasted in a physical examination," because while he was at my office I discovered on a cursory examination a distinct suspicious specific scar. His voice was also suspicious, being husky and guttural. After obtaining the marriage certificate as above stated, he came back to me for advice. I advised him to have a Wassermann taken, and he went to Dr. Hopkinson's laboratory, and the doctor reported to me that it was distinctly positive. When I told him that he had syphilis and should not get married until at least two years from now, he said that he could not help it now, as everything was arranged for the wedding, and asked me what was the next best thing to do. On my advice, he took an intravenous injection of neosalvarsan the day before he was married, which was Friday, April 24. Now, his having syphilis, according to this much-boasted law, should have prevented the marriage ceremony, and my only object in reporting this case is to show that there are physicians in Milwaukee and probably elsewhere in the state who think that they are getting easy money by putting their names to these slips, which is, without doubt, perjury, in some instances.

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[1] "Macaura Comes Back," editorial, THE JOURNAL A. M. A., Aug. 5, 1911, p. 485.

Case 2.—This is another example of the manner in which this much-boasted law worked out. While this case has not come directly under my observation, it has appeared in the public press, and is known to all. A woman has been posing and masquerading as a man in Milwaukee for the past ten years. She has held numerous positions of a masculine character, from bell-hop to bookkeeper. She recently developed an unnatural affection of a psychopathic type for another girl, and wanted to marry her. In order to carry out the rulings of the eugenic law, she had to get a certificate that "he" was free from all venereal diseases, from a physician. She went to a physician, who, by the way, is a member of our county and state medical societies, and he signed her certificate, thinking all the time that she was a man.

What kind of an examination could have been made? It is stated in the press that the doctor made a blood examination, but we rarely, or never look for the gonococcus of Neisser in the blood. Both physicians referred to in the above report are members of the Milwaukee County Medical Society.

The certificates provided by the Wisconsin Eugenic Law, read as follows:

> I, ——————————being a legally licensed physician, do certify that I have this ——— day of ————————, 19——, carefully and thoroughly examined————————————, having applied the recognized clinical and laboratory tests of scientific search and find him to be free from all venereal diseases, so nearly as can be determined.

The word "search" in the certificate I have never heard accounted for, but we know that it probably means "research."

Section 7 of the Wisconsin Eugenic law reads as follows.

> Any physician who shall knowingly or willingly make any false statement, in the certificate provided for in Subsection 1, of this section, shall be guilty of perjury, and a conviction under this subsection shall revoke the license of such physician to practice in this state.

What is to stop some innocent victim, a wife, for instance, from bringing suit for damages against the physician for signing a marriage certificate without complying with the law, if she should develop syphilis or gonorrhea from her newly married husband? All she will need is the proof, which can easily be obtained if these physicians continue to take "easy money" without proper and necessary examination. In the name of common decency, if we are to have such a law, let us uphold it, and not make ourselves the laughing-stock of the public.

The following comment from the Milwaukee *Free Press* shows the layman's attitude on the subject:

> The eighteenth century, in spite of its boasted "reign of reason," was gullible to a degree. Theophile Gautier stands second to no writer in *raffinement* of imagination. Yet we doubt that the gullibility of the one or the imagination of the other would have been equal to swallowing or inventing anything equal to this seriocomic defeat of a eugenic marriage law in twentieth century Wisconsin.
>
> Were not the subject so desperately ticklish, one might long for the pen of an Aristophanes, a Plautus or a Jonson to turn this sex adventure into a blazing satire on the folly of half-baked and half-enforced legislation.

The whole medical profession suffers when one or more of its members persist in slipshod and unethical methods. I will say this to the credit of the Wisconsin medical societies, both county and state, that not one of the five physicians now awaiting trial for abortion, here in Milwaukee, belongs to the medical societies. And I am glad to say that this speaks well for the morality of the greater number of the medical men in Wisconsin.

A. J. Caffrey, M.D., Milwaukee, Wis.

The Tuberculosis Problem

To the Editor.—I am extremely interested in the articles on "The Tuberculosis Problem" which have been appearing in The Journal (Department of Therapeutics, March 14 to April 25). They contain a great deal of information of importance to the general medical profession and are very timely. I disagree, however, with a statement which is of far-reaching significance and which should not be left unchallenged.

In considering a case of tuberculosis in a home as a source of infection to those who live in it, great emphasis is laid on the communicability of the disease to children. Close contact of children with tuberculous persons is regarded, in this article, as a factor in the incidence of active tuberculosis among children, which infection either results fatally or, in a majority of cases, becomes latent, these latent foci constituting the determining factor in the production of active tuberculosis in adults.

In emphasizing this theory of von Behring's, the article falls into the error of minimizing the danger of tuberculous infection in adult life to the point of suggesting that even the term "communicable" ought to be modified or more carefully explained. It is our experience, however, that close contact with uncontrolled "open" cases of tuberculosis in homes does lead to infection of adults, as shown by the everyday experiences of tuberculosis workers, dispensaries, sanatoriums, etc., all over the land.

The tentative theory (not fully proved) is that infection in childhood is *one* of the important factors determining the incidence of tuberculosis among adults. The repeated infections of the adult by an uncontrolled tuberculous case in a home is, however, also a factor of importance in causing the existing prevalence of tuberculosis. The implantation of the germ in the child should be prevented; it should also be prevented in the adult (be he a carrier of latent foci or not). Should the statement made in your Department of Therapeutics be correct, patients with advanced cases of tuberculosis ought to be hospitalized only in instances in which children are in contact with the source of infection. Our present arrangement is designed, however, to give protection not only to the child but to the adult as well.

I greatly appreciate the educational value of these important articles on the tuberculosis problem, and yet I consider it my duty to raise the question in reference to the abovementioned important point.

Theodore B. Sachs, M.D., Chicago.

[Comment.—It was not intended to convey the idea that open tuberculosis cases could not convey infection to adults, and it was hoped that the entire discussion emphasized the proper care that such patients should receive, not only for their own sake, but also to prevent the infection of others. It was intended to declare the belief that by far the greatest danger in infection of others is to children, and that an intelligent adult, under medical supervision and having received, and acting under careful instructions, is a menace to no one, unless he is helpless and in bed, in which case it is the nurse who should act under instructions.

Dr. Sachs' letter is welcomed, as evidently these points were not made plain.—Ed.]

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

MEDIUMS FOR OIL-IMMERSION LENSES

To the Editor:—Is there any reason why one should not use glycerin with an oil-immersion lens in microscopy? It is much easier to clean from the lens and slide after using than the usual cedar oil. Unless it can be harmful to the lens in some manner, I do not see why it is not more in use. I have used it for some time.

M. A. LEE, M.D., Superior, Wis.

ANSWER.—Objectives intended for immersion are specially corrected for the specific medium to be employed. Four mediums have been used: water, cedar oil, monobromid of naphthalin and glycerin. Water has a refractive index of 1.33, and when used with ordinary glass, must have a correction applied. The objective will not receive so many rays from the object when used with cedar oil, whose refractive index is 1.52, nearly the same as that of the glass employed for the cover-glass. Monobromid of naphthalin has a higher refractive index, 1.567, and special flint cover-glasses must be employed with it. Glycerin has a refractive index of 1.478, which is not far from the refractive index of the ordinary cover-glass, so that it probably could be used without much inconvenience.

THE MOSZKOWICZ TEST

To the Editor:—Please describe the methods of Moszkowicz and Sandrock for examination to determine where to operate in gangrene, etc.

HORACE FOX, M.D., Bath, Me.

ANSWER.—The test of Moszkowicz is applied as follows: The affected limb is elevated until a marked pallor of the skin occurs. A circular, broad, elastic bandage is applied around the thigh as high up as possible, and the constrictor is allowed to remain in place five minutes. When the constrictor is removed, the hyperemic blush spreads over the limb but is much less intense as the ischemic areas of the foot or leg are approached. The contrast between the red and pale areas is marked in proportion with the extent of the arterial obstruction. An operation within the pale zone is likely to end in a sloughing of the flaps, but amputation may be made with safety anywhere within the line of the pink or hyperemic skin. This method is not accepted as reliable by all authorities.

We are unable to give the Sandrock method.

STATES WHICH RECIPROCATE WITH MAINE

To the Editor:—What states have reciprocal relations with Maine?

F. J. M.

ANSWER.—Maine has reciprocal relations with Arkansas,* Colorado,* Delaware,* District of Columbia,* Georgia, Illinois,* Indiana, Iowa, Kansas, Kentucky, Louisiana,* Maryland,* Michigan, Minnesota,* Missouri, Nebraska, New Jersey,* Ohio, South Carolina, Tennessee, Texas,* Utah, Vermont,* Virginia,* Wisconsin and Wyoming.* Those marked with an asterisk (*) reciprocate on the basis of an examination only; the others reciprocate on the basis either of an examination or of a diploma from a reputable medical college without examination if the diploma and license were granted prior to July 1, 1901.

An Estimate of the Scientist.—When the intellectual history of this time comes to be written, nothing I think will stand out more strikingly than the empty gulf in quality between the superb and richly fruitful scientific investigations that are going on and the general thought of other educated sections of the community. I do not mean that the scientific men are as a whole a class of supermen, dealing with and thinking about everything in a way altogether better than the common run of humanity, but that in their own field they think and work with an intensity, an integrity, a breadth, boldness, patience, thoroughness and faithfulness that (excepting only a few artists) puts their work out of all comparison with any other human activity.—H. G. Wells, "Marriage."

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARIZONA: Phoenix, July 7-8. Sec., Dr. John Wix Thomas, Phoenix.

CALIFORNIA: Los Angeles, June 16. Sec., Dr. C. B. Pinkham, 135 Stockton St., San Francisco.

COLORADO: Denver, July 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

DELAWARE: Dover and Wilmington, June 16-18. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

FLORIDA: Palatka, June 17-18. Sec., Dr. E. W. Warren, Palatka.

GEORGIA: Atlanta and Augusta, June 3. Sec., Dr. C. T. Nolan, Marietta.

IOWA: Iowa City, June 11-13. Sec., Dr. Guilford H. Sumner, State House, Des Moines.

KANSAS: Kansas City, June 9-12. Sec., Dr. H. A. Dykes, Lebanon.

KENTUCKY: Louisville, June 15-17. Sec., Dr. A. T. McCormack, Bowling Green.

LOUISIANA: New Orleans, June 4-6. Sec., Dr. E. L. Leckert, Macheca Bldg., New Orleans.

MAINE: Augusta, July 7-8. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

MAR[illegible] lar Board: Sec., Dr. J. McP. Scott, [illegible] nore, June 15. Sec., Dr. O. N. Duvall, [illegible]

MICHIGAN: Ann Arbor, June 9. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: Minneapolis, June 2-5. Sec., Dr. Thomas S. McDavitt, 814 Lowry Bldg., St. Paul.

MISSISSIPPI: Jackson, June 16-17. Sec., Dr. E. H. Galloway, Jackson.

MISSOURI: St. Louis, June 15-17. Sec., Dr. J. A. B. Adcock, Jefferson City.

MONTANA: Helena, June 30-July 2. Sec., Dr. Wm. C. Riddell, Helena.

NEW HAMPSHIRE: Concord, July 1-2. Regent, Mr. H. C. Morrison, Concord.

NEW JERSEY: Trenton, June 15-16. Sec., Dr. H. G. Norton, 429 E. State St., Trenton.

NEW YORK: June 23-26. Chief of Examinations Division, Mr. Harlan H. Horner, Department of Education, Albany.

NORTH CAROLINA: Raleigh, June 9. Sec., Dr. Benj. K. Hays, Oxford.

NORTH DAKOTA: Grand Forks, July 7. Sec., Dr. G. M. Williamson, Grand Forks.

OHIO: Columbus, June 2-5. Sec., Dr. George H. Matson, State House, Columbus.

OREGON: Portland, July 7-9. Sec., Dr. L. H. Hamilton, Medical Bldg., Portland.

PENNSYLVANIA: Philadelphia, June 1-3. Sec., Mr. Nathan C. Schaeffer, Harrisburg.

RHODE ISLAND: Providence, July 2-3. Sec., Dr. Gardner T. Swarts, State House, Providence.

SOUTH CAROLINA: Columbia, June 9. Sec., Dr. A. Earle Boozer, 1802 Hampton Ave., Columbia.

TEXAS: Austin, June 23-25. Sec., Dr. W. L. Crosthwait, Waco.

VIRGINIA: Richmond, June 23-26. Sec., Dr. Herbert Old, Norfolk.

WASHINGTON: Seattle, July 7. Sec., Dr. C. N. Suttner, Baker Bldg., Walla Walla.

WEST VIRGINIA: Elkins, July 1. Sec., Dr. S. L. Jepson, Wheeling.

WISCONSIN: Milwaukee, June 29. Sec., Dr. John M. Beffel, 3200 Clybourn St., Milwaukee.

WYOMING: Laramie, July 9-11. Sec., Dr. H. E. McCollum, Laramie.

Missouri Reciprocity Report

Dr. J. A. B. Adcock, secretary of the Missouri State Board of Health, reports that 38 candidates were licensed through reciprocity from May 1 to Dec. 10, 1913. The following colleges were represented:

College	Year Grad.	Reciprocity with
University of Colorado	(1911)	Colorado
Georgia College of Eclectic Med. and Surg.	(1905) (1911) (1912)	Georgia Georgia Georgia
Hospital Medical College, Eclectic, Atlanta	(1910)	Georgia
Northwestern University	(1911)	Illinois
Rush Medical College	(1881) (1884) (1893)	Iowa Louisiana Kansas
Medical College of Indiana	(1905)	Indiana
State University of Iowa, Coll. of Homeo. Med.	(1908)	Iowa
State University of Iowa, Coll. of Med.	(1906) (1910) (1912)	Iowa Iowa Iowa
University of Kansas	(1906) (1911) (1912) (1912)	Kansas Kansas Kansas Kansas
University of Louisville	(1905) (1910)	Illinois Kansas
Johns Hopkins University	(1907) (1911)	Maryland Maryland
Barnes Medical College	(1910)	Illinois
Ensworth Medical College	(1911)	Nebraska
Homeopathic Medical College of Missouri	(1908)	Illinois
Kansas City Hahnemann Medical College	(1905) (1912)	Kansas Kansas
Kansas City Medical College	(1895)	Kansas
St. Louis University	(1908)	Illinois
Washington University	(1906)	Illinois
University Medical College, Kansas City	(1903) (1905) (1910)	Kansas Kansas Kansas
John A. Creighton Medical College	(1906) (1912)	Iowa Nebraska
Cornell University	(1903)	Kansas
University of Cincinnati	(1899)	Nevada
University of Nashville	(1903)	Texas

Book Notices

Chronic Colitis: Its Causation, Diagnosis and Treatment. By George Herschell, M.D., and Adolphe Abrahams, M.D., Medical Registrar to the London Temperance Hospital. Cloth. Price, $2. Pp. 273. New York: Longmans, Green & Co., 1914.

A careful study of a single disease by the refined diagnostic means of modern research is presented in this book. The physician of a past generation could shrewdly guess that his patient who complained of chronic diarrhea with pain and occasionally bloody stools was suffering from colitis, but he did not dream of such a condition when constipation was the principal symptom. In such cases he had no reliable means of examination which would determine whether or not his surmise was correct. The symptoms were often referred to nervousness and, indeed, a large number of cases passed under the name of colica mucosa as due to a purely nervous secretion of mucus. The authors base their description of the disease on the results of examinations by the sigmoidoscope and the laboratory methods of examination of the feces. The methods of diagnosis are systematic, but sometimes lacking in detail. Although the statement is made that "one can not only palpate the colon, but can determine its exact position, its condition of emptiness or fulness, etc.," no directions for making such an examination are given except a reference to the work of Vincent. The directions for the examination of the feces are reasonably full. About half the work is given to the subject of treatment. The removal of a probable cause is insisted on, and due credit is given to diseases of the teeth, the nasopharynx and the stomach as causes of the intestinal affection. The consideration of the diet is especially thorough and detailed. Minute directions are given for the use of enemas, irrigations, etc. The question of the possibility of entering the colon by a soft tube is presented and the opposing opinions of Combe and of Kemp are quoted, but no decision is given. A long list of medicinal agents is mentioned which are supposed to act as intestinal antiseptics, and their actions and classification according to Combe are described. Here again the opinion of Combe is quoted, but the authors give no final decision, although they seem inclined to favor the opinion that these agents act as efficient intestinal antiseptics. The untenability of the opinion that charcoal cures flatulence by absorbing gases is recognized, but the authors think that it is efficient against flatulence by some unexplained action on the intestinal wall. Practically no proprietaries are mentioned except such as have received general approval like ichthyol, aspirin, etc. The authors state that so far as they know theirs is the first English manual that has appeared on this subject, and they are to be congratulated on having produced a book of so high a grade which at the same time is so adequately adapted to the needs of the general practitioner. It is gratifying to note the care with which they acknowledge the sources of their information and the considerable extent to which they have made use of the work of American investigators.

A Text-Book of Histology Arranged on an Embryological Basis. By Dr. Frederic T. Lewis, Assistant Professor of Embryology at the Harvard Medical School and Dr. Philipp Stöhr. Second Edition. Cloth. Price, $3 net. Pp. 539, with 495 illustrations. Philadelphia: P. Blakiston's Son & Co., 1914.

This book, which is largely the work of Lewis and retains but little of Stöhr's original text, is arranged on an embryologic basis, the development of each organ being described as an introduction to the study of its microscopic structure in the adult. This method of presentation, which is a new departure in text-books on histology, is logical and pedagogically practicable. It proceeds from simple arrangements to those which are complex, and it emphasizes fundamental features in distinction from those which are secondary. Anatomy is likewise accorded an important place. References to a selection of recent papers are given. The general arrangement is similar to that of other works on this subject. There is a chapter on microscopic technic. The illustrations are numerous and good.

Medicolegal

Construction of Pure-Food Law with Reference to Adulteration

(United States vs. Lexington Mill & Elevator Co. (U. S.), 34 Sup. Ct. R. 337)

The Supreme Court of the United States says that the statute on its face shows that the primary purpose of Congress was to prevent injury to the public health by the sale and transportation in interstate commerce of misbranded and adulterated foods. The legislation, as against misbranding, intended to make it possible that the consumer should know that an article purchased was what it purported to be; that it might be bought for what it really was, and not on misrepresentations as to character and quality. As against adulteration, the statute was intended to protect the public health from possible injury by adding to articles of food consumption poisonous and deleterious substances which might render such articles injurious to the health of consumers.

The fifth subdivision of Section 7 provides that food shall be deemed to be adulterated "if it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health." Congress has here definitely outlined its inhibition against a particular class of adulteration. It is not required that the article of food containing added poisonous or other added deleterious ingredients must affect the public health, and it is not incumbent on the government in order to make out a case to establish that fact. The act has placed on the government the burden of establishing, in order to secure a verdict of condemnation under the statute, that the added poisonous or deleterious substances must be such as may render such article injurious to health. The word "may" is here used in its ordinary and usual signification.

In thus describing the offense, Congress doubtless took into consideration that flour may be used in many ways, in bread, cake, gravy, broth, etc. It may be consumed, when prepared as a food, by the strong and the weak, the old and the young, the well and the sick; and it is intended that if any flour, because of any added poisonous or other deleterious ingredient, may possibly injure the health of any of these, it shall come within the ban of the statute. If it cannot by any possibility, when the facts are reasonably considered, injure the health of any consumer, such flour, though having a small addition of poisonous or deleterious ingredients, may not be condemned under the act.

This court affirms the judgment of the circuit court of appeals reversing a decree condemning certain flour as adulterated by bleaching because the trial court permitted the statute to be read without the final and qualifying words concerning the effect of the article on health, rendering a new trial necessary.

Time for Commencement of Action for Being Made a Morphin User

(Gillmore vs. Gillmore (Kan.), 137 Pac. R. 958)

The Supreme Court of Kansas holds that an action for damages because of the defendant having induced the plaintiff to become a user of morphin, in ignorance of its nature, is not for relief on the ground of "fraud," within the meaning of that term as used in the statute of limitations. The running of the statute of limitations, on an action for damages because of the defendant having induced the plaintiff to become a user of morphin, is not wholly suspended by the fact that the plaintiff, knowing the manner in which the habit was induced, and having acquired knowledge of the effects of the drug, has been so affected mentally as not to be capable of protecting his own interests. Such an action can be brought only within one year from the time that mental capacity is restored, under the Kansas statute of limitations.

Society Proceedings

COMING MEETINGS

AMERICAN MEDICAL ASSOCIATION, ATLANTIC CITY, JUNE 22-26.

American Academy of Medicine, Atlantic City, June 19-21.
American Climatological Association, Atlantic City, June 19-20.
American Gastro-Enterological Association, Atlantic City, June 22-23.
American Laryn., Rhin., and Otol. Society, Atlantic City, June 19-20.
American Orthopedic Association, Philadelphia, June 18-20.
American Proctologic Society, Atlantic City, June 22-23.
American Urological Association, Philadelphia, June 18-20.
Conf. of State and Prov. Boards of N. America, Washington, June 19-20.
Maine Medical Association, Portland, June 10-11.
Massachusetts Medical Society, Boston, June 9-10.
Montana State Medical Association, Lewistown, July 8-9.
New Jersey Medical Society, Spring Lake, June 29.
North Carolina Medical Society, Raleigh, June 16.
Rhode Island Medical Society, Providence, June 4.

AMERICAN ASSOCIATION OF PHYSICIANS

Twenty-Ninth Annual Meeting, held at Atlantic City, N. J., May 12 and 13, 1914

The President, DR. SIMON FLEXNER, New York, in the Chair

Officers

The following officers were elected for the ensuing year: president, Dr. S. J. Meltzer, New York; vice-president, Dr. Henry Sewall, Denver; secretary, Dr. George M. Kober, Washington, D. C., reelected; recorder, Dr. Thomas McCrae, Philadelphia, reelected; treasurer, Dr. J. P. Crozer Griffith, Philadelphia, reelected.

Advance in Medical Knowledge

DR. SIMON FLEXNER: The extension of the boundaries of knowledge has compelled medical colleges to become departments of universities. This rapid extension of knowledge coincided with the active pursuit of physiology, pathology, bacteriology and pharmacology, either alone or in association with clinical studies for which special laboratories and institutes came to be established. Independent institutions for medical research have exercised a distinct influence on medical practice, but the foundation of these institutions was impossible until medical schools furnished an adequate supply of students whose training approximated that of the older European countries. All these conditions have acted more powerfully on clinical teaching. The professor of medicine in the university medical school ceased long ago to be a general practitioner. The function of the clinical teacher has been newly defined within one or two decades. The American Association of Physicians has sympathized with every movement affecting the progress of medical education, and it favors this latter step with the single hope that if it be in the real interest of medical progress, it may be given a chance to succeed.

Chronic Interstitial Gastritis

DR. JOSEPH SAILER, Philadelphia: A man, aged 45, had been subjected to various forms of medical treatment, without avail. An exploratory operation showed the condition of the stomach entirely in accord with the clinical picture. The stomach walls were very thick. The stomach was adherent posteriorly and around the pylorus. Gastro-enterostomy would have been difficult, in addition to giving no definite relief. There were no enlarged glands along the lesser curvature, but the adhesions were dense along the greater curvature, and a definite gland mass could not be felt. There was no evidence of metastasis. The abdomen was closed and the patient made a satisfactory recovery from the exploratory operation.

DISCUSSION

DR. DAVID RIESMAN, Philadelphia: Recently I saw a typical case of leather-bottle stomach which was very malignant, because the patient had cachexia and ascites. Both of these conditions in this case were sufficient to determine that the condition was cancerous. The man died in a few weeks. There were no evidences of metastases in the liver, and the liver was not enlarged at any time. Another case that came to necropsy showed no metastases from any of the viscera, but marked enlargement of the glands along the greater curvature of the stomach.

The Nature of Peristalsis and the Action of Magnesium Sulphate

DR. S. J. MELTZER, New York: Peristalsis is a complicated condition in which the phenomenon of inhibition plays an important part, and magnesium sulphate acts by affecting this inhibitory force.

Clinical Study of One Thousand Cases of Gastric-Cancer

DR. JULIUS FRIEDENWALD, Baltimore: The cases occurred in 10,416 patients, affected with various gastro-intestinal disturbances. The maximum liability to the disease occurred between the fortieth and sixtieth years. The greatest proportion of cases occurred in males, 588 to 412 females. A hereditary history of cancer appeared in 9.4 per cent. of cases, a history of trauma in 1.9 per cent., and anemia was present in 82 per cent. Chronic endocarditis was present in 11.4 per cent., arteriosclerosis in 69.6 per cent. A history of former indiscretions in diet was obtained in 32.1 per cent.; of alcoholism in 15.2 per cent.; of syphilis in 7.9 per cent.; hyperchlorhydria in 4.9 per cent.; hypochlorhydria in 2.8 per cent., and anacidity in 89.2 per cent. Lactic acid was present in 81.9 per cent. Oppler-Boas bacilli were obtained in 79.3 per cent. Dysphagia existed in 6.9 per cent. of all cases. Loss of weight existed in 88.5 per cent. Anorexia was present in 89.3 per cent., and vomiting in the same percentage. Occult blood was present in the stools in 92.5 per cent. Masses in the form of tumors were detected in 71.9 per cent. Dilatation of the stomach existed in 46.7 per cent. Perforation occurred in 2.3 per cent. Metastasis existed in 67.2 per cent.

When and How to Use Tuberculin Preparations in Private Practice

DR. S. SOLIS-COHEN, Philadelphia: My modification of Latham's method: tuberculin residue (T. R.) triturated with milk-sugar is given with skim-milk, whey or beef-juice. The initial dose is 0.000001 mg. Both subjective and objective symptoms of reaction are watched for. The dose is repeated once or twice weekly, according to result. It is gradually increased by increments of 0.000001 mg. to the reaction-point, and then dropped one point lower, and so continued for some weeks. Later, a further increase is attempted, and if reaction is not shown, is proceeded with in a similar gradual way. The arbitrary increment of 0.000001 mg. is maintained during this remittent progression, until 0.0001 mg. has been reached. After that, the increment may be raised to 0.00001. Thus by successive stages, a maximum dose is attained at a point determined for each individual by all the factors in the case, including the rapidity of increase, character and intensity of reaction and maintenance of tolerance, as well as the focal and general signs of improvement. The treatment is continued with intermissions, for many months, and may be resumed, if necessary, from time to time over a period of years.

In the majority of advanced cases tuberculin is likely to be harmful. Experienced observers may employ it cautiously under conditions that seem to call for its use, but others should avoid it, especially in cases which show a tendency to continuous fever, or in which there is, or has been recently, active softening. In the great bulk of early cases it is needless. Under proper treatment, medicinal as well as hygienic recovery will take place without it. Its field of action is in the treatment of cases which have not passed beyond the stage of infiltration and which have shown a certain degree of improvement under proper food, fresh air, judicious rest and exercise, and other approved measures, including the right drugs, but in which improvement becomes sluggish or ceases, or retrogression takes place. The slight additional stimulus afforded by an appropriate tuberculin preparation administered at well-chosen times, and in correct dosage, will often reawaken the defensive and restorative processes of the organism, and be followed by complete recovery.

Book Notices

CHRONIC COLITIS: ITS CAUSATION, DIAGNOSIS AND TREATMENT. By George Herschell, M.D., and Adolphe Abrahams, M.D., Medical Registrar to the London Temperance Hospital. Cloth. Price, $2. Pp. 273. New York: Longmans, Green & Co., 1914.

A careful study of a single disease by the refined diagnostic means of modern research is presented in this book. The physician of a past generation could shrewdly guess that his patient who complained of chronic diarrhea with pain and occasionally bloody stools was suffering from colitis, but he did not dream of such a condition when constipation was the principal symptom. In such cases he had no reliable means of examination which would determine whether or not his surmise was correct. The symptoms were often referred to nervousness and, indeed, a large number of cases passed under the name of colica mucosa as due to a purely nervous secretion of mucus. The authors base their description of the disease on the results of examinations by the sigmoidoscope and the laboratory methods of examination of the feces. The methods of diagnosis are systematic, but sometimes lacking in detail. Although the statement is made that "one can not only palpate the colon, but can determine its exact position, its condition of emptiness or fulness, etc.," no directions for making such an examination are given except a reference to the work of Vincent. The directions for the examination of the feces are reasonably full. About half the work is given to the subject of treatment. The removal of a probable cause is insisted on, and due credit is given to diseases of the teeth, the nasopharynx and the stomach as causes of the intestinal affection. The consideration of the diet is especially thorough and detailed. Minute directions are given for the use of enemas, irrigations, etc. The question of the possibility of entering the colon by a soft tube is presented and the opposing opinions of Combe and of Kemp are quoted, but no decision is given. A long list of medicinal agents is mentioned which are supposed to act as intestinal antiseptics, and their actions and classification according to Combe are described. Here again the opinion of Combe is quoted, but the authors give no final decision, although they seem inclined to favor the opinion that these agents act as efficient intestinal antiseptics. The untenability of the opinion that charcoal cures flatulence by absorbing gases is recognized, but the authors think that it is efficient against flatulence by some unexplained action on the intestinal wall. Practically no proprietaries are mentioned except such as have received general approval like ichthyol, aspirin, etc. The authors state that so far as they know theirs is the first English manual that has appeared on this subject, and they are to be congratulated on having produced a book of so high a grade which at the same time is so adequately adapted to the needs of the general practitioner. It is gratifying to note the care with which they acknowledge the sources of their information and the considerable extent to which they have made use of the work of American investigators.

A TEXT-BOOK OF HISTOLOGY ARRANGED ON AN EMBRYOLOGICAL BASIS. By Dr. Frederic T. Lewis, Assistant Professor of Embryology at the Harvard Medical School and Dr. Philipp Stöhr. Second Edition. Cloth. Price, $3 net. Pp. 539, with 495 illustrations. Philadelphia: P. Blakiston's Son & Co., 1914.

This book, which is largely the work of Lewis and retains but little of Stöhr's original text, is arranged on an embryologic basis, the development of each organ being described as an introduction to the study of its microscopic structure in the adult. This method of presentation, which is a new departure in text-books on histology, is logical and pedagogically practicable. It proceeds from simple arrangements to those which are complex, and it emphasizes fundamental features in distinction from those which are secondary. Anatomy is likewise accorded an important place. References to a selection of recent papers are given. The general arrangement is similar to that of other works on this subject. There is a chapter on microscopic technic. The illustrations are numerous and good.

Medicolegal

Construction of Pure-Food Law with Reference to Adulteration

(United States vs. Lexington Mill & Elevator Co. (U. S.), 34 Sup. Ct. R. 337)

The Supreme Court of the United States says that the statute on its face shows that the primary purpose of Congress was to prevent injury to the public health by the sale and transportation in interstate commerce of misbranded and adulterated foods. The legislation, as against misbranding, intended to make it possible that the consumer should know that an article purchased was what it purported to be; that it might be bought for what it really was, and not on misrepresentations as to character and quality. As against adulteration, the statute was intended to protect the public health from possible injury by adding to articles of food consumption poisonous and deleterious substances which might render such articles injurious to the health of consumers.

The fifth subdivision of Section 7 provides that food shall be deemed to be adulterated "if it contain any added poisonous or other added deleterious ingredient which may render such article injurious to health." Congress has here definitely outlined its inhibition against a particular class of adulteration. It is not required that the article of food containing added poisonous or other added deleterious ingredients must affect the public health, and it is not incumbent on the government in order to make out a case to establish that fact. The act has placed on the government the burden of establishing, in order to secure a verdict of condemnation under the statute, that the added poisonous or deleterious substances must be such as may render such article injurious to health. The word "may" is here used in its ordinary and usual signification.

In thus describing the offense, Congress doubtless took into consideration that flour may be used in many ways, in bread, cake, gravy, broth, etc. It may be consumed, when prepared as a food, by the strong and the weak, the old and the young, the well and the sick; and it is intended that if any flour, because of any added poisonous or other deleterious ingredient, may possibly injure the health of any of these, it shall come within the ban of the statute. If it cannot by any possibility, when the facts are reasonably considered, injure the health of any consumer, such flour, though having a small addition of poisonous or deleterious ingredients, may not be condemned under the act.

This court affirms the judgment of the circuit court of appeals reversing a decree condemning certain flour as adulterated by bleaching because the trial court permitted the statute to be read without the final and qualifying words concerning the effect of the article on health, rendering a new trial necessary.

Time for Commencement of Action for Being Made a Morphin User

(Gillmore vs. Gillmore (Kan.), 137 Pac. R. 958)

The Supreme Court of Kansas holds that an action for damages because of the defendant having induced the plaintiff to become a user of morphin, in ignorance of its nature, is not for relief on the ground of "fraud," within the meaning of that term as used in the statute of limitations. The running of the statute of limitations, on an action for damages because of the defendant having induced the plaintiff to become a user of morphin, is not wholly suspended by the fact that the plaintiff, knowing the manner in which the habit was induced, and having acquired knowledge of the effects of the drug, has been so affected mentally as not to be capable of protecting his own interests. Such an action can be brought only within one year from the time that mental capacity is restored, under the Kansas statute of limitations.

Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, June 22-26.

American Academy of Medicine, Atlantic City, June 19-21.
American Climatological Association, Atlantic City, June 19-20.
American Gastro-Enterological Association, Atlantic City, June 22-23.
American Laryn., Rhin., and Otol. Society, Atlantic City, June 19-20.
American Orthopedic Association, Philadelphia, June 18-20.
American Proctologic Society, Atlantic City, June 22-23.
American Urological Association, Philadelphia, June 18-20.
Conf. of State and Prov. Boards of N. America, Washington, June 19-20.
Maine Medical Association, Portland, June 10-11.
Massachusetts Medical Society, Boston, June 9-10.
Montana State Medical Association, Lewistown, July 8-9.
New Jersey Medical Society, Spring Lake, June 29.
North Carolina Medical Society, Raleigh, June 16.
Rhode Island Medical Society, Providence, June 4.

AMERICAN ASSOCIATION OF PHYSICIANS

Twenty-Ninth Annual Meeting, held at Atlantic City, N. J., May 12 and 13, 1914

The President, Dr. Simon Flexner, New York, in the Chair

Officers

The following officers were elected for the ensuing year: president, Dr. S. J. Meltzer, New York; vice-president, Dr. Henry Sewall, Denver; secretary, Dr. George M. Kober, Washington, D. C., reelected; recorder, Dr. Thomas McCrae, Philadelphia, reelected; treasurer, Dr. J. P. Crozer Griffith, Philadelphia, reelected.

Advance in Medical Knowledge

Dr. Simon Flexner: The extension of the boundaries of knowledge has compelled medical colleges to become departments of universities. This rapid extension of knowledge coincided with the active pursuit of physiology, pathology, bacteriology and pharmacology, either alone or in association with clinical studies for which special laboratories and institutes came to be established. Independent institutions for medical research have exercised a distinct influence on medical practice, but the foundation of these institutions was impossible until medical schools furnished an adequate supply of students whose training approximated that of the older European countries. All these conditions have acted more powerfully on clinical teaching. The professor of medicine in the university medical school ceased long ago to be a general practitioner. The function of the clinical teacher has been newly defined within one or two decades. The American Association of Physicians has sympathized with every movement affecting the progress of medical education, and it favors this latter step with the single hope that if it be in the real interest of medical progress, it may be given a chance to succeed.

Chronic Interstitial Gastritis

Dr. Joseph Sailer, Philadelphia: A man, aged 45, had been subjected to various forms of medical treatment, without avail. An exploratory operation showed the condition of the stomach entirely in accord with the clinical picture. The stomach walls were very thick. The stomach was adherent posteriorly and around the pylorus. Gastro-enterostomy would have been difficult, in addition to giving no definite relief. There were no enlarged glands along the lesser curvature, but the adhesions were dense along the greater curvature, and a definite gland mass could not be felt. There was no evidence of metastasis. The abdomen was closed and the patient made a satisfactory recovery from the exploratory operation.

DISCUSSION

Dr. David Riesman, Philadelphia: Recently I saw a typical case of leather-bottle stomach which was very malignant, because the patient had cachexia and ascites. Both of these conditions in this case were sufficient to determine that the condition was cancerous. The man died in a few weeks. There were no evidences of metastases in the liver, and the liver was not enlarged at any time. Another case that came to necropsy showed no metastases from any of the viscera, but marked enlargement of the glands along the greater curvature of the stomach.

The Nature of Peristalsis and the Action of Magnesium Sulphate

Dr. S. J. Meltzer, New York: Peristalsis is a complicated condition in which the phenomenon of inhibition plays an important part, and magnesium sulphate acts by affecting this inhibitory force.

Clinical Study of One Thousand Cases of Gastric-Cancer

Dr. Julius Friedenwald, Baltimore: The cases occurred in 10,416 patients, affected with various gastro-intestinal disturbances. The maximum liability to the disease occurred between the fortieth and sixtieth years. The greatest proportion of cases occurred in males, 588 to 412 females. A hereditary history of cancer appeared in 9.4 per cent. of cases, a history of trauma in 1.9 per cent., and anemia was present in 82 per cent. Chronic endocarditis was present in 11.4 per cent., arteriosclerosis in 69.6 per cent. A history of former indiscretions in diet was obtained in 32.1 per cent.; of alcoholism in 15.2 per cent.; of syphilis in 7.9 per cent.; hyperchlorhydria in 4.9 per cent.; hypochlorhydria in 2.8 per cent., and anacidity in 89.2 per cent. Lactic acid was present in 81.9 per cent. Oppler-Boas bacilli were obtained in 79.3 per cent. Dysphagia existed in 6.9 per cent. of all cases. Loss of weight existed in 88.5 per cent. Anorexia was present in 89.3 per cent., and vomiting in the same percentage. Occult blood was present in the stools in 92.5 per cent. Masses in the form of tumors were detected in 71.9 per cent. Dilatation of the stomach existed in 46.7 per cent. Perforation occurred in 2.3 per cent. Metastasis existed in 67.2 per cent.

When and How to Use Tuberculin Preparations in Private Practice

Dr. S. Solis-Cohen, Philadelphia: My modification of Latham's method: tuberculin residue (T. R.) triturated with milk-sugar is given with skim-milk, whey or beef-juice. The initial dose is 0.000001 mg. Both subjective and objective symptoms of reaction are watched for. The dose is repeated once or twice weekly, according to result. It is gradually increased by increments of 0.000001 mg. to the reaction-point, and then dropped one point lower, and so continued for some weeks. Later, a further increase is attempted, and if reaction is not shown, is proceeded with in a similar gradual way. The arbitrary increment of 0.000001 mg. is maintained during this remittent progression, until 0.0001 mg. has been reached. After that, the increment may be raised to 0.00001. Thus by successive stages, a maximum dose is attained at a point determined for each individual by all the factors in the case, including the rapidity of increase, character and intensity of reaction and maintenance of tolerance, as well as the focal and general signs of improvement. The treatment is continued with intermissions, for many months, and may be resumed, if necessary, from time to time over a period of years.

In the majority of advanced cases tuberculin is likely to be harmful. Experienced observers may employ it cautiously under conditions that seem to call for its use, but others should avoid it, especially in cases which show a tendency to continuous fever, or in which there is, or has been recently, active softening. In the great bulk of early cases it is needless. Under proper treatment, medicinal as well as hygienic recovery will take place without it. Its field of action is in the treatment of cases which have not passed beyond the stage of infiltration and which have shown a certain degree of improvement under proper food, fresh air, judicious rest and exercise, and other approved measures, including the right drugs, but in which improvement becomes sluggish or ceases, or retrogression takes place. The slight additional stimulus afforded by an appropriate tuberculin preparation administered at well-chosen times, and in correct dosage, will often reawaken the defensive and restorative processes of the organism, and be followed by complete recovery.

DISCUSSION

Dr. Abraham Jacobi, New York: I have used tuberculin in doses of from 0.00001 up to 0.0002, and I have never seen any unpleasant symptoms. I have given it in combination with other treatments or remedies. My routine treatment in chronic cases of pulmonary tuberculosis consists in the internal administration of guaiacol and arsenic with tuberculin, and I have observed no disagreeable symptoms which I could attribute to the tuberculin.

(To be continued)

LOUISIANA STATE MEDICAL SOCIETY

Thirty-Fifth Annual Meeting, held at New Orleans, April 20-23, 1914

(Concluded from page 1587)

Autoplastic Bone-Grafting

Dr. John F. Oechsner, New Orleans: Autogenous transplantation of bone is an established surgical procedure. Whether dependent for growth on periosteum, or on the graft as a scaffolding for the development of blood-vessels, transplants for the present should be provided with both, particularly plenty of periosteum. Non-absorbable suture material had better be avoided, whenever possible, dovetailing and absorbable material being used in their stead. It is highly probable that organized bone-tissue will take the place of foreign material now used in fractures. Bone-grafting should never be done in the presence of an active infection. The most rigid asepsis should be exercised. Bone-grafts owe their virility and ultimate success probably to the rapidity of blood-vessel development plus the presence of osteoblasts wherever they may be.

Modern Diagnostic Methods in Genito-Urinary Surgery

Dr. H. W. E. Walther, New Orleans: The foundation of diagnostic methods in genito-urinary surgery is urinalysis. We have in the Buerger cysto-urethroscope an instrument by means of which it is possible to obtain absolutely true pictures of the bladder-neck and the posterior urethra. The relatively modern progress attained in perfecting the technic of kidney, ureteral and vesical surgery has made the use of the cystoscope and the ureteral catheter a necessity in the diagnosis of all bladder, ureteral and kidney lesions as well as in the differential diagnosis of many abdominal conditions. The newer methods for determining the functional capacity or activity of the kidneys include cryoscopy, the estimation of the electrical conductivity of the urine, the production of temporary glycosuria by the subcutaneous injection of phlorizin, the production of experimental polyuria and chromocystoscopy, that is, the elimination by the kidneys of certain color substances, as methylene blue, indigocarmin and phenolsulphonephthalein. Pyelography is helpful in demonstrating the normal kidney pelvis; the amount of dilatation of the pathologic pelvis; the position of the outlet of the pelvis of the kidney; the condition of the calices and pyramids; localization of shadows within the kidney; the differentiation of abdominal tumors and extrarenal shadows; congenital deformities of the kidney, and the condition of the ureters.

Treatment of Bladder Tumors by the High-Frequency Current

Dr. Joseph Hume and **Dr. Samuel Logan**, New Orleans: We have treated ten cases embracing almost every form of tumor encountered in bladder growths. In 4 cases of papilloma, 3 patients are apparently well, and 1 has just begun treatment; in 4 cases of malignant papilloma, 1 patient has gone home apparently cured, 2 are still under treatment, and 1 died during treatment from nephritis; in 2 cases of cancer, one patient dying from nephritis, the tumor when last seen was controlled; and one patient is still under treatment, seemingly better.

Pituitary Extract in Obstetric Practice

Dr. M. Thomas Lanaux, New Orleans: Pituitary extract should not be given in normal labor. Its use should be limited to cases of primary or secondary inertia, to postpartum hemorrhages and in cesarean sections as a substitute for ergot. In cases of inertia in any stage of labor it should not be employed unless anesthesia is at hand for immediate use and preparation has been made for immediate delivery. When obstructions exist in the second stage of labor, small tentative doses of pituitary extract can be given, not with complete delivery by means of the drug in view, but to bring the head within easy reach of a single simple forceps delivery. In the second stage of labor it is a most valuable addition to our resources for the treatment of inertia.

Cancer

Dr. C. Jeff Miller, New Orleans, introduced the following resolution, which was adopted:

> *Resolved*, That the society approves of a public educational campaign for the control of cancer and endorses the purposes of the American Society for the Control of Cancer.
>
> It urges the State Board of Health to open its laboratories for the examination of tissue and to supply through its bulletin the necessary details for collecting and mailing specimens, and that the society appoint a permanent committee on cancer that shall collect data, furnish as a committee articles for the lay press, and encourage the study of cancer throughout the state.

Dr. F. W. Parham, New Orleans: Primary cancer of the small intestine in at least 40 per cent. of cases gives rise to obstruction much earlier than in the case of the large intestine. Sixteen cases of operation before complete occlusion gave a mortality of 18.7 with 13 cures; 10 cases after occlusion gave 70 per cent. mortality with only 3 cures.

Dr. Isadore Dyer, New Orleans: It is difficult to catalogue all the lesions of the skin which might be listed under the title of precancerous lesions of the skin, for the reason that experience shows that almost any inflammatory process with destruction of tissue may end in carcinoma.

Dr. William H. Harris, New Orleans: A specific histopathologic picture for the so-called precancerous stage has not been recognized by pathologists, but a careful cooperation between the surgeon and the pathologist in such considerations is capable of bringing forward information of equal value to the patient as if the precancerous stage were a definite entity.

Dr. William Kohlmann, New Orleans: Since 1908 I have performed the radical (Wertheim) operation for carcinoma of the uterus in thirty-two cases, and a good number of these patients have been far beyond the stage at which a cure could be expected. Only a very few of them have been clearly within the limit that may be called operable, and these have been operated on only in the last three years. In the years 1908 and 1909 I operated on thirteen patients; three died, three were temporarily improved, and seven were free from symptoms for one or two years. They were all advanced cases.

Gunshot Wounds of the Abdomen

Dr. J. G. Martin, Lake Charles: I have operated in two cases successfully. One had a perforation of the small intestine and of the bladder. The other had three perforations of the ileum and one of the transverse colon. In the latter case, in which I operated about one hour after the receipt of the injury, the patient would have died from hemorrhage, if not from peritonitis, as active bleeding was going on from one of the mesenteric vessels.

Treatment of Compound Fractures

Dr. L. B. Crawford, New Orleans: I favor the use of Lane plates in the treatment of these fractures. My results in four cases strengthen my conviction that this method of treating compound fractures is worthy of some note.

Postoperative Management of Surgical Cases

Dr. E. Denegre Martin, New Orleans: Results depend on a more intimate knowledge of patients, the better management of operations, and on the exercise of judgment, which can be gained only by experience—not the mistaken experience of the useless administration of unnecessary drugs, but the experience of non-interference.

THE AMERICAN DERMATOLOGICAL ASSOCIATION

Thirty-Eighth Annual Meeting, held in Chicago, May 14-16, 1914

The President, Dr. James MacFarlane Winfield, Brooklyn, in the Chair

Officers Elected

The following officers were elected for the coming year: president, Dr. S. Pollitzer, New York; vice-president, Dr. Martin F. Engman, St. Louis; secretary and treasurer, Dr. Oliver S. Ormsby, Chicago. Place of next meeting, New York.

Teaching of Dermatology—The Care of Lepers

Dr. James MacFarlane Winfield, New York: Dermatology is coming into its own, and is being recognized among medical men as one of the most scientific, difficult and important of the medical specialties; but in spite of that even now there are comparatively few schools that teach the subject properly. The time has come when we of dermatologic thought and teaching should make a united effort to improve and unify the teaching of skin diseases. It should be our endeavor to do everything possible to correct the custom that still prevails in many of our medical schools of having syphilis taught by the chair of genito-urinary diseases. Granting that syphilis is a constitutional systemic disease, the cutaneous specialist is the one who is trained to recognize its varied manifestations. Is it not logical that he would also be better able to teach it than any one else? We may look still farther beyond, and begin to advocate now the establishment of a special department and chair of syphilology in all of our medical schools and hospitals, in order that the whole subject may be taught systematically by men especially trained for this work. Owing to the influx of people from those countries where leprosy is endemic, and the increased number of these cases in the United States it would seem to me that this association should join hands with other medical bodies in urging on the United States government the necessity for a national law and the establishment of a national home or homes for lepers. I would therefore suggest that a committee of this association be created to draft a memorial to be presented to the President of the United States, and the Senate and House of Representatives, setting forth the dangers of the leper at large, and urging the need of his detention in a place under national control, where he could receive the proper care, and where scientific investigations could be carried on with a view to the relief of the unfortunate himself, the prevention of the further spread of the disease, and the eventual eradication of it from the world.

[In accordance with this recommendation a permanent committee on leprosy was appointed and the association adopted resolutions as recommended by the president.]

PARONYCHIA: ETIOLOGY AND TREATMENT

Dr. Howard Morrow and Dr. A. W. Lee, San Francisco: In considering the subject of paronychia, we shall limit it to an inflammation of the nail-bed and nail-fold due to organisms apart from those considered to be the etiologic factors in lues, tuberculosis, tinea, blastomycosis, etc. Of sixteen cases studied by us, two were acute and fourteen of long standing, and all have been caused, as shown culturally, by the *Staphylococcus pyogenes albus.* No definite conclusions could be drawn from this limited number of cases as to whether age, sex or occupation bears any distinct relation to the pathologic condition. Thirteen of these cases remained as uncomplicated paronychia, while three progressed to onychia, with exfoliation of the nail. In only one case did the pathologic condition involve the feet, and in this case all of the toes were affected. Of the hand cases, all the nails were involved in only two instances, and the remainder varied from one to six diseased nails. In fourteen of the cases the condition started about the nails and remained confined to that location until cured. In two cases the disease was secondary to pyogenic dermatitis on other portions of the body. In each case it was possible to obtain from the lesions a pure culture of the *Staphylococcus pyogenes albus,* and, singularly enough, no other organisms grew on the culture mediums employed, namely, blood-serum and agar. Notwithstanding this experience, it is probable that the *Staphylococcus pyogenes aureus* is responsible for a certain percentage of cases.

For some years we have followed the treatment by ointments, compresses, powders and, in recent years, by vaccines. A large percentage of the cases treated by these measures have given unsatisfactory results, probably because of the fact that aside from vaccines these applications do not penetrate into the affected areas. In our hands vaccine therapy did not give the same satisfactory results as the method to be described. The preparation used with the greatest amount of success was a saturated solution of chrysarobin in chloroform. This combination was found more satisfactory than the usual preparation of chrysarobin with a fatty base. The reason for using chloroform as a menstruum is that it has a high tissue-penetrating index. The reason for using chrysarobin is that it has a high staphylococcic bactericidal influence. The following method of using this preparation was employed: The plica unguis should be raised from the nail and the affected area swabbed with the chrysarobin preparation. This should be done once daily until there is no longer any pus formation. The latter condition usually subsides after a few applications. It must be remembered, however, that chrysarobin occasionally causes an intense dermatitis, even after one application, and in such cases this treatment should be pursued with caution. By this method all of our patients were cured in from one to three weeks.

DISCUSSION

Dr. Charles J. White, Boston: Paronychia is not a particularly common infection in the Massachusetts General Hospital, but when we do see it, it is very apt to be in Jewish housewives. The explanation for this apparently is that they are not allowed to use soap in the washing of their dishes for fear that there may be some pig fat in the composition of the soap.

Dr. A. Ravogli, Cincinnati: I have seen a great many cases of eczema of the nail-bed, which I would not exactly call paronychia, because there was not suppuration, but only a little oozing, with swelling and formation of a crust around the nail-bed. These cases I have found to be exceedingly stubborn. I have seen these cases in women employed in factories, and also in those who use the typewriter. The nail has very seldom been affected in these cases. I have also had some cases of true paronychia, with a great deal of suppuration present, and also raising up of the nail, but in these cases incision and removal of the pus have given good results. To correct the eczematous condition referred to, I have found the application of a tincture of iodin, going inside the nail-bed, in the fold of epidermis, a very good measure.

Dr. D. W. Montgomery, San Francisco: A great number of these cases are certainly due to the streptococcus. In order to get a culture of the streptococcic infective agent, though, it is necessary to cultivate it anaerobically. The suggestion made by Jadassohn is of very great importance, namely, to use a platinum needle of exceeding fineness, and drive down into the culture-medium, so that you get an anaerobic cultivation—otherwise it dies out. The suggestion of Sabouraud of cultivating a streptococcus by a blood-medium, excluding the air by a device of an attenuated culture-tube, finely drawn out, in my opinion is not nearly so good as that of Jadassohn. Of course, I recognize also that paronychia is very frequently an accompaniment of eczema.

Dr. George H. Fox, New York: Some one has recently called attention to manicuring the nails and perhaps overrated the evil results from it; but recently the newspapers even in New York have had a number of special articles on the question of forcing the manicurists to obtain licenses, on account of the bad results from their work.

Dr. Howard Morrow, San Francisco: As referred to by Dr. Ravogli, applications of tincture of iodin are very efficacious, as are also those of silver nitrate.

(To be continued)

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Eighth Annual Meeting, held in New York City, April 28-30, 1914

(Continued from page 1686)

Uterine Hemorrhage in Young Girls

Dr. Henry C. Coe, New York: In the absence of any discovered cause for the hemorrhage, local or general, the practitioner is thrown back on experimental medicine and must interrogate rigidly the ductless glands, with more or less doubtful results. Organotherapy must be regarded as the best curative agent along this line. The prognosis must depend on the actual or supposed cause of the condition. Care should be exercised in making caustic applications to the endometrium which are not absolutely controllable and may cause irreparable injury to the delicate organ in subjects of tender years. One of my colleagues has had success in the treatment of obstinate hemorrhage in young women by ligation of the uterine arteries by the vagina which is practically out of the question in young children. I can conceive of cases in which exploratory abdominal section might be elected, even when pelvic examination was negative, but it would be a desperate case indeed in which both ovaries would be removed, not to speak of supravaginal amputation of the uterus.

DISCUSSION

Dr. Harvey P. Jack, Hornell: I have had many cases of hemorrhage in young girls. In several repeated curettements, hygienic measures, parotid gland and thyroids have been administered without relief. These patients seem hardly to recover from the exhausting hemorrhage of one menstruation before another begins. Thyroid extract in small doses, long continued, has proved of great benefit in a few cases, but the agent that has cured every one of these severe cases so far is calcium chlorid. One girl in particular has been brought from a bleached-out nervous wreck to brilliant health by the use of this drug alone.

Sterility in Women

Dr. Willis E. Ford, Utica: Formerly, I was accustomed to use galvanism for a considerable period in these cases to develop the uterus after slitting the posterior neck and divulsion, and I have the history of many cases in which pregnancy followed, even after a lapse of a number of years of sterility. This treatment had to be carried on, however, for several months, and the results were good for a time, but I do not think they compare with the shorter and more simple procedure advocated by Pozzi, especially with respect to the permanency of results. I have been at work long enough to follow the history of many young girls for ten years or more and up to the time of their marriage, and even afterward, and I am convinced that if early and complete drainage is secured through the uterus by this simple procedure in the few cases of cervical deformity, many serious conditions encountered later in life can be prevented and sterility can be avoided in many instances.

Dysmenorrhea

Dr. Rosalie Slaughter Morton, New York: Many gynecologists consider pain at the menstrual period normal. Martin of Germany designates as dysmenorrhea those disturbances which most women experience at the time of menstruation, such as pains in the back, discomfort, continual desire to urinate, etc., and says that these are attendant symptoms which are borne by women prudently. Anteflexion is more commonly associated with pain. I have seen these patients do well with systematic regulation of diet, the drinking of sufficient water, proper hours of sleep and graduated outdoor and indoor exercises, with a strict attention to the minor troubles, bringing these patients from semi-invalidism to efficiency. The working classes are troubled with dysmenorrhea, the percentage depending largely on the development of the individual. Kelly finds 75 per cent. of the college women suffer from dysmenorrhea. I have found poorly nourished, overworked store employees to the extent of 7 per cent. with no pain at the menstrual period. In several young patients with habitual constipation, with no definite pain at the onset of menstruation, with uterus and adnexa normal, but with prolapse of the sigmoid the dysmenorrhea has disappeared after correction of this condition. I recommend postural treatment.

DISCUSSION

Dr. Caroline S. Finley, New York: Most mothers ask me whether or not they should keep their girls in bed the first day during the menstrual period, and I always advise them, if the girls are normal, not to do so. Pain during menstruation may be due to intestinal indigestion. By relieving the constipation you help the mild cases of dysmenorrhea. Again, many patients say that their daughters have leukorrhea. I find on examination that it is simply a serous discharge which comes before the menstrual flow and which is one of its safeguards.

Dr. I. C. Rubin, New York: Theoretically, there is every reason to agree with Dr. Morton on the question of pelvic congestion as causing a lot of pain which is common in dysmenorrhea. If one uses 1/75 grain of atropin, taken in tablets, three times a day, it will bring about the cessation of pain. It must be taken a few hours before the expected period. The atropin is supposed to affect also the uterine muscles. A great many unmarried girls, especially factory girls, suffer more from dysmenorrhea than girls in better social states.

Dr. Mary T. Rose, New York: There is one point which the general practitioner should emphasize, and that is, the congestion in these cases is due to retention in the rectum. We find this especially in our women with dysmenorrheic symptoms. I have found that a good deal of their trouble is primarily retention of fecal matter in the rectum.

Pregnancy in a Tuberculous Woman

Dr. E. Parry, New York: If a woman with tuberculosis is pregnant, she may bear the first pregnancy well, the second pregnancy not so well, and the third one not at all. After parturition, tuberculosis advances rapidly. A woman who has tuberculosis should never become pregnant. Ninety-seven cases of laryngeal tuberculosis are reported in the literature, and of this number ninety patients died. Actively tuberculous patients should be forbidden to marry, or if they do marry they should not become pregnant, or if they become pregnant a therapeutic abortion should be performed.

DISCUSSION

Dr. Ralph W. Lobenstine, New York: Not infrequently pregnancy, especially if too rapidly repeated, will lay the foundation for the development of tuberculosis. That point is generally overlooked. Either pregnancy or the act of parturition aggravates the existing tuberculosis in a large percentage of cases. In von Bardeleben's cases 40 per cent. proved fatal. In my series 50 per cent. of the severe cases terminated fatally within two months after parturition. In the bad cases the patients lose ground rapidly either during labor or within three weeks afterward. During the puerperium the tuberculosis may assume a fulminating character and cause death in a surprisingly short time. The causes of rapid changes post partum are briefly these: prolonged muscular exertion of labor, loss of blood, use of anesthesia, only slightly, and the possibility of renewed toxins or tubercle bacilli being forced into the system from the placental site, all of which are serious and far-reaching in their results. Therapeutic abortion is indicated in the early months in all active cases. Tuberculous persons should, if possible, be forbidden to marry. I feel strongly that if they marry they should be forced to keep from propagating.

Dr. John O. Polak, Brooklyn: I am in full accord with the position taken by Dr. Lobenstine and Dr. Parry regarding tuberculosis and pregnancy as being incompatible in certain stages of the disease, and when we have the indications, as we do in any active process, for interference, I want particularly to speak of the method of emptying the uterus. A considerable experience has shown us that unless the uterus is emptied early in these cases we have a very prolonged abortion, so to speak, by the ordinary expectant plan. Under local anesthesia these patients can be delivered by a vaginal hysterotomy at the third month. Before the eighth week ordinary curettage can be done without the slightest difficulty. After that time, when placental formation has taken place, I would advocate anterior vaginal hysterotomy under local anesthesia or under spinal anesthesia.

Infection with Bacillus Coli Communis Complicating Pregnancy

Dr. Edward P. Davis, Philadelphia: Colon bacillus infection of the large intestine complicating pregnancy is seen in women who have neglected hygienic precaution during pregnancy, who have remained obstinately constipated or who have taken irritant drugs to empty the bowels. The pain is usually localized in the intestine and not in the peritoneum. The colon bacillus may affect the new-born infant, causing icterus and ophthalmia. It may be the cause of septic abortion or of septic infection. In cases of infection of the uterus and appendages by the colon bacillus, as determined by an examination of the contents of the uterus, the treatment does not differ from puerperal infection of other origin, except that a tendency to mixed infection and pus formation must be remembered. In these cases pelvic abscess may be expected and demand drainage.

(To be continued)

MISSISSIPPI STATE MEDICAL ASSOCIATION

Forty-Seventh Annual Meeting held at Columbus, April 14-16, 1914

(Concluded from page 1685)

Some Surgical Conditions Affecting the Biliary Tract

Dr. J. W. Barksdale, Winona: Barring gynecologic and appendix cases, affections of the gall-bladder and bile-ducts are more frequently encountered than any other abdominal ailment. Excepting malignancy and neoplasms, these are all due to bacterial invasion. These cases are exclusively surgical.

DISCUSSION

Dr. John Darrington, Yazoo City: If the gall-bladder is drained, the chances are that the patient will have subsequent trouble again and again until he finally comes to the surgeon for a complete removal. It is extremely important that the surgeon should have a keen appreciation of the condition of the gall-bladder while the abdomen is open.

Dr. W. W. Crawford, Hattiesburg: It is astonishing how many of these cases have gone on year after year without being recognized by us, and how many of them have been treated for indigestion. The symptoms are so like those of ulcer of the stomach that one is pardoned for concluding that the patient has some trouble of that kind, and the great fallacy is that so many of these patients who are dieted improve. The strange thing is that though the bladder may be filled with stones, the patient will improve when placed on a rigid diet, to such a degree that he feels practically well. But he has a series of relapses year in and year out until finally the gall-bladder is either drained or removed.

Prostatectomy

Dr. John Darrington, Yazoo City: The conscientious surgeon approaches these cases with much anxiety, since prostatic enlargement comes with advancing years when degenerative changes have occurred in the vital organs. The choice between the perineal and suprapubic routes should be dependent on the conditions found in the individual case.

DISCUSSION

Dr. J. W. Barksdale, Winona: I have a decided preference for the perineal operation. The patient can get up in from forty-eight to seventy-two hours, and with these old patients that is certainly an advantage. Drainage is another factor, and they can be drained better by the perineal method than by the suprapubic route.

Dr. E. M. Holder, Memphis, Tenn.: The question of the route by which we shall approach the prostate is an important one. The suprapubic route is gaining; men who were favoring the perineal route five or six years ago are now advocating the suprapubic. The operation which appeals to me in most cases is to open the bladder and introduce a catheter through the urethra into the bladder. In very old patients and with cases with the usual bad kidneys and cardiac changes that go along with this trouble, I have found it well to do the operation in the two-step way.

Appendicitis Twenty-Four Hours after the Attack

Dr. L. D. Dickerson, McComb: If fever subsides and pain is relieved, operate after twelve days. If the reverse is the case, operate at once. While waiting, use opiates and ice-bags. The patient should have absolutely nothing by the mouth.

Head Injuries

Dr. G. W. Cale, St. Louis: Fracture of the skull is of serious moment in proportion to the complications that may accompany it. Each individual case of head injury should be studied from the anatomic and physiologic points of view, with the assistance of the Roentgen ray. After a diagnosis is reached, the plan of treatment is usually easily determined.

DISCUSSION

Dr. H. T. Inge, Mobile, Ala.: Treatment of head injuries is not different in many particulars from the treatment of all other forms of injury. The same amount of care in handling a case of head injury will make that injury amenable to treatment just the same as an injury in any other part of the body. In December, in a terrible railway wreck, 169 men were injured. The predominating injuries were head and face injuries. There were several cases in which the brain substance escaped through the wound. There were extensive lacerations of the scalp; and the emergency treatment adopted was not by a surgeon, but by a member of the Hospital Corps, applying the emergency dressing which every United States soldier carries with him. Every soldier hurt in this wreck, as soon as placed in a hospital, was given an immunizing dose of antitetanic serum. His wounds were then dressed by the surgeons and not a single case of infection occurred.

Treatment of Fracture

Dr. S. W. Johnston, Vicksburg: No fracture should be put in a permanent splint until apposition has been demonstrated by the Roentgen ray. When accurate alignment cannot be secured by the usual methods, an incision should be made and a plating done. All compound fractures should be treated by the "open" method.

The Need of General Information on Infant-Feeding

Dr. R. N. Whitfield, Florence: The average physician says that he is too busy to spare the time necessary to perfect himself in the details of infant-feeding. One reason is that so much of his time is taken up in treating the conditions caused by improper feeding of infants. Another is that average milk-production is faulty. Milk laboratories are necessary—to get them we need cooperation among physicians and money. A clean dairy, a trained nurse and a couple of delivery-boys would supply our average town, and the nurse would have time to spare in which she might visit the homes of the poor where infants are being artificially fed.

Convulsions in Infancy and Childhood

Dr. A. W. McNeal, Ruleville: The most common cause is toxemia from intestinal disturbances. Rachitis has not been a factor in my practice.

Chorea

Dr. S. A. Majure, Dixon: Arsenic has given me the best results. General tonics are indicated and rest is essential. I have never seen a case in a negro.

Infantile Paralysis

Dr. J. C. McNair, Fayette: We had nineteen cases of infantile paralysis in Jefferson County in 1911. No more than two cases were within 5 miles of each other. My first case showed high temperature and rigidity of muscles, especially of the back and lower extremities. In another, the only fatal case, there was involvement of the respiratory muscles. In one there was loss of function of both lower limbs, the mother not thinking it necessary to call in a physician until she found that her child could not walk. The symptoms preceding the paralysis are not the same in all cases; they may be so insignificant as to be disregarded.

Quinin Amaurosis

Dr. W. M. Biggs, Rome: The patients in the cases which I report were aged, respectively, 2, 4, 6 and 4 years. The first three were brothers. The first received 2 grains every three hours for three days and then 4 grains every hour for a day; the second 6 grains every four hours for a day; the third 8 grains every four hours for a day and then 10 grains *of quinin with urea hypodermatically. The fourth was given* 40 grains of quinin and urea hypodermatically in two doses, six hours apart.

DISCUSSION

Dr. E. C. Parker, Gulfport: I should like to know if Dr. Biggs had his *quinin thoroughly examined to see* whether or not there were any impurities in it.

Dr. A. W. McNeal, Ruleville: There was recently a case of quinin amaurosis in my settlement. It resulted from the administration of something like 8 grains at four-hour intervals. That treatment was kept up for a day and eight hours, and the woman became totally blind. The quinin was discontinued and Fowler's solution begun in that case. The patient remained partially blind for something like a week after withdrawal of the quinin, but finally regained complete sight.

Rabies

Dr. F. M. Ranck, A. and M. College: Rabies may last from three to thirteen days and is most always fatal. It is not advisable to kill suspicious animals if they may be kept under observation. In the treatment of the wound, antiseptics and caustics are recommended. Bier's ligature is sometimes helpful.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

May, VII, No. 5, pp. 337-408

1 *Intestine in Health and Catarrh, as Pathway of Infection to Tubercle Bacillus. L. Findlay, Glasgow.
2 *Congenital Elevation of Scapula (Sprengel's Deformity) of Familial Type. Report of Nineteen Cases. H. Neuof, New York.
3 Respiratory Infections in Infants' Wards. W. F. Chappell and A. Brown, New York.
4 Recent Contributions to Our Knowledge of Nephritis. R. M. Smith, Boston.

1. **Tuberculous Infection.**—Healthy animals were killed by Findlay at short intervals varying between four and ten days, after the introduction of an exceedingly virulent culture (three weeks old) of tubercle bacillus and, with one exception (when the dose was 10 mg.), each capsule contained 5 mg. Emulsions of one lung and all the mesenteric glands from each case were made and introduced intraperitoneally through a small abdominal wound in *rabbits*, which were used for the secondary inoculations. Three of the animals inoculated with an emulsion of lung died too soon to give the disease time to develop, but in all the others ample time was allowed. In two of the animals inoculated with mesenteric glands, tuberculosis developed, thus showing that living tubercle bacilli had migrated to the mesenteric glands, but in not one instance were living bacilli demonstrated in the lungs by animal experiment. Both of the above mentioned infected animals had lived for a period of fifty-three days, and yet the disease was slight. It consisted of small tubercles situated chiefly in the omentum, but also in the mesentery and diaphragm, and apparently spreading by the lymphatics, the disease had infected the pleural cavities, several small subpleural nodules being visible. Films of the nodules revealed very scanty tubercle bacilli.

In one rabbit inoculated intraperitoneally with a very minute dose of the same culture as was used in the primary experiments, death occurred at the end of three days, when the peritoneum was found studded with minute tubercles containing abundant tubercle bacilli. In the inhalation experiments with the same type of organism, but another culture, the lungs were absolutely solid within thirty days. This *very different picture, Findlay says, would seem to show that* tubercle bacilli in their passage through the intestinal mucosa diminish considerably in virulence, but, the fact remains, that living tubercle bacilli can pass through the apparently healthy mucosa and reach the mesenteric glands within a period of six days, but such is *not of very frequent occurrence.*

In the second series of experiments the bacilli were introduced in greater quantity (10 mg.) after the animal had recovered from an intestinal catarrh induced by an infusion of senna leaves. In only one case out of five were living tubercle bacilli demonstrated in the mesenteric glands, but in not one instance were they shown to have reached the lungs within a matter of six days.

In a third series of experiments the animals were kept alive a sufficient time for the disease to develop. The dose of the culture varied between 10 and 20 mg. and was administered in a gelatin capsule with the stomach-tube. The majority of the animals (87 per cent.) which lived forty-six days or longer developed tuberculosis. In all the positive cases the gastro-intestinal tract presented lesions visible to the naked eye, and, with one exception, where undoubtedly insufflation had occurred, the intestinal foci were the most extensive. The appendix and adenoid patch at the ileocecal valve invariably, and in the earliest cases these parts alone, were the seat of the mischief. In one experiment, however, of only forty-six days' duration the cecum was in addition studded throughout with small nodules, and the mesenteric glands were extensively involved, presenting numerous caseous foci. In the majority of the positive experiments the mesenteric glands were also affected, and in those rabbits which had survived fifty days or longer infection of the *Peyer's patches was found, and in those killed seventy days* or more after inoculation an occasional nodule was encountered in the lungs. In no case was the spleen observed to be the seat of tuberculosis. These experiments prove that rabbits can be infected by feeding with tuberculous material. *In every instance the most extensive mischief was situated* locally in the intestine, and thus they lend absolutely no support to the idea that primary tuberculosis of any organ other than the bowel, can arise from bacilli which have gained admission by the intestinal route.

Of seventeen rabbits with diarrhea infected experimentally which lived longer than nineteen days, fourteen, that is, 82 per cent., developed tuberculosis, and all those that survived at least thirty days, that is, 100 per cent., showed definite infection of the gastro-intestinal tract. As in the healthy animals the earliest lesions were situated in the appendix and lymphoid area at the ileocecal valve in the form of small whitish nodules about the size of a pinhead lying immediately under the peritoneal coat. When the animals had lived for at least forty-one days the mesenteric glands invariably presented caseous foci, and the cecum and *lungs were as a rule the seat of tuberculosis. It is thus* seen that in the animals which had previously suffered from enteritis the lesions were on the whole similarly distributed to those occurring in rabbits not so affected.

Findlay also found that healthy rabbits may be infected by the ingestion of large amounts of the human tubercle bacillus. Rabbits just recovered from intestinal catarrh constantly, and within a much shorter period, develop tuberculosis after the ingestion of human tubercle bacilli. With the human type of organism a local intestinal lesion is not *always present, and when present is slight in comparison* with the diseased foci in the mesenteric glands or lungs.

Apparently primary pulmonary tuberculosis can be caused in rabbits by the ingestion of large amounts of human tubercle bacilli.

Findlay believes that the best means of combating the spread of bovine infection in childhood is in the avoidance of everything likely to cause intestinal catarrh, and in the sterilization of milk intended for the use of infants and children.

2. **Sprengel's Deformity.**—As a result of the study of 19 cases Neuhof concludes that congenital elevation of the scapula occurs in a familial form; unilateral and bilateral congenital elevation of the scapula are varieties of one affection. The deformity of the scapula and the defects in the trapezius (as well as other coexisting anomalies) are parts of a more general fault in development, i. e., Sprengel's deformity is a manifestation of atavism when it prevails in a familial form. It is probably a manifestation of atavism when it occurs in isolated instances. Neuhof is convinced that if sought for, more instances of congenital elevation of the scapula of familial type will in all probability be found.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

May, LXIX, No. 5, pp. 753-908

5 *Experiences with Spinal Anesthesia in Pelvic Surgery. B. M. Anspach, Philadelphia.
6 Clinical Significance of Sarcomatous Change in Uterine Fibromyoma. S. H. Geist, New York.
7 *Treatment of Necrosis of Uterine Fibroma. G. E. Shoemaker, Philadelphia.
8 Prevalence of Puerperal Sepsis in Gynecologic Wards of Philadelphia Hospitals. J. A. McGlinn, Philadelphia.
9 Present Status of Puerperal Infection in Private Practice—Practical Methods of Prevention and Treatment. C. Foulkrod, Philadelphia.
10 Primary Malignant Tumors of Female Urethra. B. P. Watson, Toronto.
11 Perithelioma of Uterus. B. P. Watson, Toronto.
12 Experiences with Method of Immediate Repair of Perineal Lacerations. G. Baughman, Richmond, Va.
13 Spontaneous Evolution in Shoulder Presentation, with Report of Three Cases. G. L. Brodhead, New York.
14 Post-Typhoid Suppuration of an Ovarian Cyst Infected by Bacillus Typhosus of Eberth. F. H. Maier, Philadelphia.
15 Pregnancy Complicated by Typhoid with Hemorrhage and Relapse; Delivery at Term. S. Berkowitz, New York.
16 Simple Method of Testing for Formalin after Administration of Hexamethylenamin. G. L. Kaufmann, Chicago.

5. **Spinal Anesthesia in Pelvic Surgery.**—Spinal anesthesia even in expert hands, according to Anspach will have a higher immediate mortality as a routine anesthetic than ether, chloroform or nitrous oxid. It has no postoperative mortality or morbidity, and in this respect is superior to ether, chloroform and infiltration anesthesia, but it is not superior in this respect to nitrous oxid and oxygen. It is more troublesome to the surgeon than ether, chloroform or nitrous oxid and oxygen anesthesia. Anspach advises that spinal anesthesia should not be used unless the surgeon has familiarized himself thoroughly with all the details of the technic; he also should be aware, fully, of the complications which may arise, and be ready to meet them at a moment's notice. Well given it is the best form of anesthesia in selected cases, but it should be reserved for those operations in which the dangers of general anesthesia are increased, or in which nitrous oxid and oxygen and local anesthesia are unsuitable or unsatisfactory.

7. **Necrosis of Uterine Fibroma.**—The best treatment of necrotic fibroma, Shoemaker says, is preventive. That is, the removal of all large or growing tumors, or those which cause symptoms, before they become necrotic. The Roentgen ray is a temporizing expedient which will result in many deaths, either from overlooked malignancy, or from late complications. Whenever possible, Shoemaker states, the tumors should be removed by the vagina, leaving the uterus if possible, and leaving the ovaries if hysterectomy is done. The actual cautery is a valuable help in the vaginal cases for after-treatment of the tumor site. The mortality will depend on the degree of infection present when the operation is performed, and should be lowest in those treated by the vagina.

American Journal of Public Health, Boston

April, IV, No. 4, pp. 289-390

17 Statistical Study of Measles. F. S. Crum, Newark, N. J.
18 Result of Experimental Employment of Hypochlorite Treatment to Portion of Chicago City Water-Supply. G. B. Young, Chicago.
19 Marriage Registration: One Way Out. W. J. V. Deacon, Topeka, Kan.

Archives of Diagnosis, New York

January, VII, No. 1, pp. 1-100

20 Importance of Subjective Symptoms for Early Recognition of Cancer. I. Levin, New York.
21 Bismuth Meal Roentgenogram in Diagnosis. W. A. Bastedo, New York.
22 Acute Gastrectasis. R. W. Wilcox, New York.
23 Periarticular Suppuration of Pure Gonococci Origin. D. Stetten, New York.
24 Dysmenorrhea. S. W. Bandler, New York.
25 Prostatic Incident in Diabetes. H. Stern, New York.
26 Epistaxis as an Expression of Systemic Disease. H. Hays, New York.
27 Tuberculosis of Cecum. H. E. Stein, New York.
28 Diagnostic Pitfalls in Pediatrics. Miliary Tuberculosis. Acute Intussusception. Pylorus Stenosis. H. B. Sheffield, New York.
29 Hyperthyroidism—Its Etiology and Symptomatology. W. H. Good, Philadelphia.
30 *Murphy Button Almost Entirely Digested Within Four Years. O. Kiliani, New York.

30. **Murphy Button Almost Entirely Digested.**—In 1904 a posterior gastro-enterostomy by means of a Murphy button was done by Kiliani. After that, the patient was perfectly well for five months, then he began to suffer from the same symptoms as before operation, namely, vomiting and epigastric pain, but never as severe. Before operation he often vomited blood, but never after that. During all these four years whenever he got an attack of pain and vomiting, he would stop work for a week or so, until it subsided, and then resume his work.

His history before the last operation was as follows: Lately attacks have become more severe, and from four to five weeks he has had continual pain in the epigastrium, with exacerbation of very agonizing pain, coming on especially at night, not after meals. He thinks pain is relieved by eating, but it returns with increased force, one to one and a half hours after meals. Pain radiates to back and is very intense there, chiefly on left side, also shoots to region of heart, never to shoulder or downward. Soon after the pain comes he has to vomit, usually one to one and a half hours after meals. Often vomits large quantities; sometimes he vomits food which he took the day before. He has not vomited blood, appetite good, but afraid to eat on account of pain and vomiting. Has lost about 10 pounds. Bowels constipated, has to take cathartics. Stool usually hard and black. Urination normal. The patient says he did not pass the Murphy button which was used for his gastro-enterostomy, four years ago. Just before operation a roentgenogram was made of the umbilical region. No button was seen. Another was made of the region above this, which showed a shadow suggesting Murphy button—not as clear, though, as shadow of a metal substance should be.

In 1909 Kiliani operated again; gastrostomy then done. Without much difficulty a wire spiral spring from Murphy button was withdrawn from the pylorus. The latter was patent, and admitted tip of index finger. The remainder of stomach was then palpated, but nothing else abnormal found. The old gastro-enterostomy was carefully felt for with one finger inside of the stomach and the other one outside, but no opening could be found. Apparently it had closed entirely.

Archives of Ophthalmology, New Rochelle, N. Y.

May, XLIII, No. 3, pp. 231-356

31 Fifth Case of Acute Disseminated Myelitis with Retrobulbar Inflammation of the Optic Nerves. W. A. Holden, New York.
32 Case of Permanent Impairment of Vision Following Gastro-Intestinal Hemorrhage. G. H. Grout, New York.
33 Successful Treatment of Corneal Tumor with Radium, with Remarks on Radium in Ophthalmology. A. F. Mattice, New York.
34 Anatomic Study of Case of Temporal Conus (Coloboma) in an Hyperopic Eye. E. V. L. Brown, Chicago.
35 Department of Conservation of Vision. H. C. Greene and G. S. Derby, Boston.

Archives of Pediatrics, New York

April, XXXI, No. 4, pp. 241-320

36 *Malaria in Infants. W. Weston, Columbia, S. C.
37 Congenital Malaria. M. H. Bass, New York.
38 Significance of Mineral Salts in Digestive Disturbances of Infants. C. I. Wood, Ann Arbor, Mich.
39 Etiology and Symptomatology of Nervousness in Infancy. D. J. Levy, Detroit.
40 Unilateral Congenital Hypertrophy of Leg and Big Toe. J. Speese, Philadelphia.
41 Guaiacol Poisoning by Absorption. Report of Case. L. A. Secton, New York.

36. **Malaria in Infants.**—If seen during the early part of the paroxysm Weston gives a hot mustard bath, applies an ice cap to the head, and if the infant is having convulsions gives bromid of soda and antipyrin also. If the infant is in this stage, frequent tepid spongings give great relief. The bowels should be promptly and freely opened by the use of frequent small doses of calomel. Other medicinal treatment consists in the administration of quinin, preferably bisulphate in aqueous solution. The stomach of infants suffering from malaria is almost invariably very irritable, and it is therefore important that quinin should be given only at those times when it will be most effective in destroying the parasites. Weston advises that in benign attacks no quinin be administered for at least three hours after the temperature becomes normal. Then administer 2 grains bisulphate in aqueous solution every two hours day and night for twenty-four hours, then 2 grains of the solution every four hours for twenty-four hours, then 3 grains morning and evening for three weeks. It absorbs more readily when the stomach is empty. If difficulty is found in retaining the bisulphate, euquinin or the tannate may be tried. In pernicious malaria quinin hypodermically is the only method to be relied on.

The best salt of quinin for injection in Weston's opinion is the bimuriate. The tablets of bimuriate of quinin and urea are convenient and reliable. The 3-grain tablets contain about 2½ grains of the quinin salt. The tablet should be dissolved in distilled water or merely sterilized water. The needle and syringe must be sterile and the skin sterilized. The solution is then injected deep into the muscles. This procedure may be repeated every six hours. Finally the rectal administration of quinin may be resorted to. Here the bimuriate in doses three times as large as would be given by the mouth or intramuscularly should be given in 2 ounces of warm water. This injection should be given high up in the rectum. It is well to add 5 drops of tincture of opium to the solution to prevent tenesmus and aid retention.

Boston Medical and Surgical Journal

May 14, CLXX, No. 20, pp. 745-780

42 Territorial Autonomy in Cerebral Circulation and Its Rôle in Genesis of Symptoms in Psychoneuroses. J. W. Courtney, Boston.
43 *Ten Tests for Determining When a Patient Is Cured of Gonorrhea. C. M. Whitney, Boston.
44 Some Hygienic Tests Applied to Orthopedic Conditions. H. W. Marshall and H. L. Langnecker, Boston.

43. **Determining when Patient is Cured of Gonorrhea.**—The ten points mentioned by Whitney are an examination of the discharge, the urine, instrumental examination of the urethra, urethroscopic examination, examination of the prostate and vesicles, test by alcohol, coitus, discharge induced by irritating antiseptics, bacteriologic examination of the expressed vesicular and prostatic secretion by culture and slide, and the complement fixation test.

California State Journal of Medicine, San Francisco

May, XII, No. 5, pp. 167-218

45 George Chismore. D. W. Montgomery, San Francisco.
46 Review of Early Vaccination Controversy. P. K. Brown, San Francisco.
47 Reminiscences: Transition of Surgery to Antiseptic Surgery. M. Regensburger, San Francisco.
48 Presentation of Patient Twenty Months after Operation for Uterine Cancer Complicated with Umbilical Hernia. C. J. Teass, San Francisco.
49 *Green Operating-Room at St. Luke's Hospital. H. M. Sherman, San Francisco.
50 Blindness Following Injuries to Back of Head. L. Newmark, San Francisco.
51 Recollections of Listerian Epoch. C. G. Levison, San Francisco.
52 Removal of Cervical Lymph-Nodes in Malignant Disease of Head and Face. H. A. L. Ryfkogel, San Francisco.
53 Basic Principles in Eczema. E. D. Chipman, San Francisco.
54 Case of Extraperitoneal, Intraligamentous Dermoid Cyst and Pregnancy. H. J. Kreutzmann, San Francisco.
55 Artificial Cultivation of Gonococcus. E. A. Victors, San Francisco.
56 Early Diagnosis of Renal Tuberculosis by General Practitioner. M. Krotoszyner, San Francisco.
57 Ununited Fractures. J. T. Watkins, San Francisco.
58 Myxolipoma of the Knee-Joint. G. M. Barrett, San Francisco.
59 Artificial Pneumothorax in Advanced Lung Tuberculosis. L. S. Mace, San Francisco.
60 *Iodin Specific Germicide in Respiratory Affections. S. Blum, San Francisco.
61 Hygienic Shoeing—Anatomic Facts vs. Convention and Style. C. C. Crane, San Francisco.

49. **Green Operating Room.**—The discomfort Sherman has had in the present-day white operating rooms led him to suggest dark floors and wainscots in these rooms, so that the operator who looks up from a wound shall not encounter a glare of light and find his eyes useless for a moment, as he looks back into the less illuminated wound. The color scheme, it seemed to him should start from the red of the blood and of the tissues, therefore he advised that green, the complementary color to red, should be chosen for the color of the floor and wainscot. The particular shade of green to be selected was that which was complementary to hemoglobin, and it was found to be the green of the spinach leaf. A room painted in this way, the floor, and the walls for six feet from the floor, a bright spinach green, and all about a glazed white, was matched for use against a room painted a glazed white—floor, walls and ceiling—in the operating pavilion at St. Luke's Hospital. Sherman says that no one who could get into the green room to do an operation ever went into the white room. Above the level of the six-foot green wainscot is white encaustic tiling to the ceiling, and the ceiling itself is a bright buff. Sheets, towelings and gowns and the coverings for the instrument tables are of black.

60. **Iodin Specific Germicide in Respiratory Affections.**—In the treatment of respiratory affections Blum has employed with equally beneficial results hydriodic acid and the iodids of potassium, ammonium, sodium and strontium. The syrup of hydriodic acid, he says, is especially applicable for adults with sensitive digestion and for children. Apart from this consideration the desideratum is to give sufficient iodid to definitely affect the respiratory secretion without causing unpleasant and unfavorable symptoms—coryza, lacrimation and digestive disturbance.

Cleveland Medical Journal

May, XIII, No. 5, pp. 307-374

62 Early Types of Man. T. W. Todd, Cleveland.
63 *Persistent Hereditary Edema of Legs (Milroy's Disease) with Acute Exacerbations. Report of Two Cases. J. Phillips, Cleveland.
64 "Climatic Cure" of Pulmonary Tuberculosis in Its Relation to Other Methods of Treatment. G. W. Moorehouse, Cleveland.
65 New Pharmacopeia. W. C. Alpers, Cleveland.
66 Sediment Test for Milk. H. O. Way, Cleveland.
67 History of Physiology of Digestion. R. G. Pearce, Cleveland.

63. **Persistent Hereditary Edema of Legs.**—*Phillip's first* patient, male, aged 40, complained of severe cough, which was due to a subacute bronchitis, and this cleared up quickly under treatment. In the course of the physical examination it was discovered that there was a well-marked painless edema of the left leg, extending from the knee downward. The edema was not so well marked over the foot and ankle, because it was reduced by wearing his shoe. On further questioning, the patient stated that this condition had been present from the first year of his life. It had never caused him any great inconvenience, except that at times his affected leg would become red, swollen, hot and very tender. At these times he would feel very ill and feverish, and there would be some disturbance of his stomach. He could assign no cause for these acute attacks other than at times it would follow slight injuries. This condition would subside in the course of three or four days. These attacks began at the age of 10 years, and occurred once or twice a year until the past eight years, when they have been growing much less

frequent. His right leg was unaffected and his left leg was normal above the knee. With the exception of this condition there was nothing abnormal found on physical examination.

The second patient, a boy, aged 6 years, son of the first patient, showed a condition similar to that seen in his father, except that the right leg was affected. The general character of the swelling was the same except that there was greater edema over the dorsum of the foot because he had been going about in his bare feet all summer. His mother had first noticed the swelling of his leg when he was 4 months old, and it had gradually increased and remained since that time. The boy had suffered no inconvenience from his enlarged leg until the time he was first seen. In October, 1913, after a slight scratch on his right foot, he developed in a few hours a red brawny swelling extending to the knee. This was very painful and tender to the touch. The upper border of the swelling was raised and sharply defined. His temperature rose to 104 F. and the patient had severe nausea and vomiting. The physician who saw him at that time thought that the condition was one of septic infection and advised operative procedures, but the mother refused consent, because she knew that his father suffered similar attacks and quickly recovered. That her judgment was correct was shown by the fact that the pain, redness and swelling disappeared, and the temperature returned to normal three days later. Since then he has had no more acute attacks.

Illinois Medical Journal, Chicago

May, XXV, No. 5, pp. 285-356

68 Some Fallacies in Open-Air Treatment of Pulmonary Tuberculosis. C. W. Leigh, Chicago.
69 Acute and Chronic Miliary Tuberculosis. E. Wrightsman, Chicago.
70 *Hydrocephalus Internus, Lumbar Drainage by Utilization of Meningocele Sac as Drainage Tube. H. P. Cole, Mobile, Ala.
71 Importance of Urinalysis During Pregnancy and Significance of Positive Findings. J. H. Beard, Urbana.
72 Version and Breech Presentations. F. F. Kitzing, Chicago.
73 Disorders of Cardiac Mechanism; Their Modern Interpretation. J. Sherlaw, Chicago.
74 Spondylotherapy in Exophthalmic Goiter. J. A. Hirsch, Edwardsville.
75 Drainage of Gall-Bladder in Typhoid Carriers. E. L. Lobdell, Chicago.
76 Insanity with Special Reference to Diagnosis and Prognosis of Its Common Forms. T. B. Throckmorton, Des Moines, Iowa.
77 Spirocheta Pallida Demonstrated in Smears from a Paretic Brain by Giemsa's Stain. G. W. Brock, Peoria.
78 Depressed States Apparently Not in Manic-Depressive Group. S. N. Clark, Kankakee.

70. Abstracted in The Journal, Feb. 7, p. 485.

Journal of Abnormal Psychology, Boston

April-May, IX, No. 1, pp. 1-71

79 Psychoanalysis. P. Janet, Paris.
80 Dream Interpretation and Theory of Psychoanalysis. J. J. Putnam, Boston.
81 Recent Literature on Juvenile Suicides. L. M. Terman, Stanford University, Cal.
82 International Congress of Medical Psychology and Psychotherapy. R. Assagioli, Florence, Italy.

Kentucky Medical Journal, Bowling Green

April 15 and May 1, XII, Nos. 8-9, pp. 237-292

83 Mercurial Stomatitis. E. D. Burnett, Anchorage.
84 Psychotherapy. A. Sargent, Hopkinsville.
85 Heat Prostration. N. C. Magraw, Hopkinsville.
86 Heredity and Child Welfare. J. D. Trawick, Louisville.
87 *Question of Sex Educations. H. J. Farbach, Louisville.*
88 Scarlet-Fever Treatment. W. L. Mosby, Bardwell.
89 Fractures of Long Bones. P. N. Blackerby, Falmouth.
90 Ideal and Real in Practice of Medicine. G. G. Thornton, Lebanon.
91 Open Treatment of Fractures. G. A. Hendon, Louisville.
92 Puerperal Fever. R. T. Hocker, Arlington.
93 Use of Roentgen Rays in Treatment of Fractures. B. W. Bayless, Louisville.
94 What Shall the Country Doctor Do with His Patients? E. J. Brown, Stanford.
95 Hysteria. J. W. Hill, Frankfort.
96 Medical Ethics. H. C. Clark, Falmouth.
97 Atypical Pneumonia. O. W. Brown, Lenoxburg.
98 Epileptic Convulsions. T. J. Townsend, Owensboro.
99 Prevention of Tuberculosis. S. M. Hopkins, Demossville.
100 Menstruation and Menopause: Their Influence on Vicious Circle. W. J. Thomasson, Newport.
101 Examinations for Life Insurance. F. M. Stites, Hopkinsville.
102 Treatment of Tuberculosis. L. T. Eckler, Falmouth.
103 Preventive Medicine. J. E. Wilson, Butler.
104 Obstruction of Bowels, Intussusception. C. K. Kendall, Morgan.
105 Symptoms and Treatment of Acute Articular or Inflammatory Rheumatism. F. London, Woodburn.
106 Preventive Medicine. O. W. Brown, Lenoxburg.

Lancet-Clinic, Cincinnati

May 9, CXI, No. 19, pp. 543-566

107 On Relationship of Ductless Glands to Growth. A. D. Dunn, Omaha.
108 Latent Mastoiditis. W. Mithoefer, Cincinnati.
109 Maternal Obstetric Records in Cincinnati Hospital for Period of Twenty Years. M. A. Tate, Cincinnati.

Medical Record, New York

May 16, LXXXV, No. 20, pp. 875-920

110 *Value of Polycythemia for Diagnosis of Duodenal Ulcer. G. A. Friedman, New York.
111 Mechanic Support for Feet in Locomotor Ataxia. W. J. M. A. Maloney and V. E. Sorapure, New York.
112 Prophylaxis of Laryngeal Tuberculosis. A. R. Solenberger, Colorado Springs, Colo.
113 Chronic Prostatitis. A. Kemble, Washington, D. C.
114 Bacteria and Bacterial Proliferations in Dairy Products and Their Solution. J. M. W. Kitchen, East Orange, N. J.
115 Roentgen-Ray Treatment of Myoma. E. Birdsall, Glens Falls.
116 Voice and Manners in Medical Practice. T. D. Crothers, Hartford, Conn.

110. **Polycythemia for Diagnosis of Duodenal Ulcer.**—While in gastric ulcer and in chronic appendicitis moderate anemia is the rule and polycythemia the exception, Friedman claims that in duodenal ulcer just the reverse occurs; polycythemia is frequent and anemia rare.

Missouri State Medical Association Journal, St. Louis

May, X, No. 11, pp. 439-446

117 Some Surgical Complications of Typhoid. M. B. Clopton, St. Louis.
118 Operative Treatment of Hemorrhoids and Fistula in Ano. W. H. Stauffer, St. Louis.
119 Prevention of Deformities in Schoolchildren. B. Belove, Kansas City.
120 Early Recognition of Feeble-Minded in Public School. F. M. Barnes, Jr., St. Louis.
121 Study of Five Hundred and Seventy-Five Schoolchildren. C. W. Tooker, St. Louis.
122 Luke, Greek Physician. VI. Brain in Relation to Medical Science and Pious Faith. G. Homan, St. Louis.
123 Honey-Bee and Its Products. F. C. Ameiss, St. Louis.
124 Pyelitis Complicating Pregnancy. R. E. Wobus, St. Louis.
125 *Point in Technic of Removal of Goiter. J. H. Outland, Kansas City.
126 Ocular Manifestations of Sinus Disease. C. W. Gosney, Kansas City.

125. **Removal of Goiter**—A double four-pronged forceps is used by Outland to make traction on the lobe selected for enucleation. The superior pole is thus brought into easy operative reach often without the division of the sternomastoid muscle. An aneurysm needle is then forced under the superior thyroid vessels through the substance of the gland and ligated. The inferior vessels are treated in the same fashion, after dissecting the gland from above and freeing it from the capsule posteriorly.

New York Medical Journal

May 9, XCIX, No. 19, pp. 909-960

127 Relation of Aphasia to Mental Disease from Medicolegal Point of View. C. W. Burr, Philadelphia.
128 Sensorimotor Aphasia. J. H. Lloyd, Philadelphia.
129 Observations on Child of To-Day. T. S. Southworth, New York.
130 Psychoanalysis. M. Solomon, Chicago.
131 Psychologic Effect of Fairy Story. A. L. Benedict, Buffalo.
132 Rectal Cases Under Local Anesthesia. J. F. Saphir, New York.
133 Why Electrotherapy Cures. H. H. Seelye, Daytona, Fla.
134 Brachial Neuritis. J. F. Harris, New York.
135 Acute Dilatation of Stomach Complicating Pregnancy. N. P. Thompson, St. Louis.
136 In Memoriam: Dr. Edward Charles Spitzka. N. E. Brill, New York.

May 16, No. 20, pp. 961-1012

137 *Salvarsan a Valuable Treatment of Brain Tumor Symptoms Dependent on Syphilis. J. Collins, New York.
138 Constitutional Dysmenorrhea. S. W. Bandler, New York.
139 Apraxia in Relation to Aphasia. J. H. W. Rhein, Philadelphia.
140 Anatharia and Its Relation to Aphasia. T. H. Weisenburg, Philadelphia.
141 Need of Hospitals for Whooping-Cough in New York City. G. R. Pisek, New York.

142 Kidney Disease, with Special Reference to Test for Functional Capacity. W. E. Robertson, Philadelphia.
143 *Tropical Malaria and Its Causes. C. S. Braddock, Jr., New York.
144 Oral Sepsis of Dental Origin. W. H. Haskin, New York.
145 Shock. E. Boise, Grand Rapids, Mich.
146 Gastro-Intestinal Stasis. H. S. Graham, New York.
147 Alcohol Acidemia. S. Stern, Atlantic City, N. J.
148 Uterus Duplex Cum Vagina Bipartita. G. R. Smith, Mount Vernon, Wash.

137. **Salvarsan Treatment of Brain Tumor Symptoms Dependent on Syphilis.**—Three cases are cited by Collins to call attention to the importance of making a Wassermann examination in all cases in which there is suspicion of brain tumor. The prompt way they yielded to treatment is emphasized to testify to the value of salvarsan in the treatment of syphilitic nervous disease.

143. **Tropical Malaria**—To fight malarial fever, Braddock says, sanitation is as necessary as mosquito prevention, and this means good water and protection from the elements Everywhere in the tropics as far as possible always use mosquito curtains, as they are absolutely necessary for comfort and health. He says that if you obey the laws of the jungle you can travel with comparative security in any jungle in the world. Sleep as high from the ground as possible, drink distilled or boiled water, use mosquito curtains, give prophylactic doses of quinin, and always cut away the jungle as far as possible in the camping place. Braddock lays much stress on cutting the jungle back, because just in proportion as the jungle is cut away and the sun let in around mines, canals and railroads, cities and towns, so will the malarial rate decrease. Then if the mosquitoes are also destroyed and the people sleep as high from the ground as possible and have a good supply of rain or distilled water for drinking purposes, or artesian well water, with good sanitation, wonderful results can be accomplished.

Braddock believes that the mosquito is not the only carrier of malaria, but that, differing from yellow fever, malaria is carried by water and soil, and that the mosquito when not infected by a person suffering from malaria gets it from the water in which it was born. His observations have been made personally in Cuba and Hayti, and in Siam, French Indo-China, Siamese Malaya, Federated Malay States, and along the eastern Burmese frontier, and in Ceylon and Egypt.

Philippine Journal of Science, Manila

December, VIII, No. 6, pp. 409-557

149 Bacteriologic Observations Made During Outbreak of Plague in Manila in 1912. O. Schöbl.
150 *Some Experiments on Inoculation of Monkeys with Small-Pox. P. M. Ashburn, E. B. Vedder and E. R. Gentry.
151 Bacteriologic Examination of Certain Artesian Wells in Rizal, Cavite and Bulacan Provinces, P. I. M. A. Barber.
152 Infant Mortality in Philippine Islands. W. E. Musgrave.
153 Protective Power of Normal Human Milk against Polyneuritis Gallinarum (Beriberi). R. B. Gibson.
154 Proteoses and Fever. R. B. Gibson.
155 Albinism in Philippine Islands. V. G. Heiser and R. Villafranca.
156 Life History of *Esophagostomum Apiostomum*: I. Development Outside of Host. E. L. Walker.
157 Duration of Infectiveness of Virulent Rinderpest Blood in Water Leech, Hirudo Boyntoni Wharton. W. H. Boynton.
158 Physical and Chemical Properties of Oleoresin of Aspidium, with Respect to Detection of Adulterations. A. G. DuMez.
159 *Variability of Certain Strains of Dysentery Bacilli as Studied by Single-Cell Method. M. A. Barber.

150. **Inoculation of Monkeys.**—Ashburn and his co-workers found that fresh vesicle contents from a case of human variola is capable, when inoculated into abrasions or scarifications on non-vaccinated monkeys, of producing variola inoculata in those monkeys, the disease being marked by fever and by primary and secondary lesions. Such vesicle contents kept at ice-chest temperature for twenty-three days loses most of its virulence, but may still, in a proportion of instances, produce a mild and atypical variola inoculata, which in turn and in further modified form may be passed to other monkeys. Active and fresh vesicle contents inoculated on vaccinated monkeys may produce a fever closely resembling that of variola inoculata in the monkey and a condition permitting of interpretation as variola sine exanthemate in the monkey. Small-pox scabs or disks from man or monkey possess but a low degree of virulence, or very quickly lose their virulence. When inoculation of such scabs does result in the production of infection this may be manifested only locally at the site of inoculation. The authors restate their hypothesis that small-pox is due to a dual and divisible virus, one part of which is the cause of vaccinia and the pock stage of small-pox, the other part being necessary for the production of the highly contagious febrile, general disease with an initial stage and preliminary rashes.

159. **Dysentery Bacilli.**—From a culture of bacillus dysenteria, Flexner type, derived from a single-cell, 3 series of single-cell isolations were made by Barber at intervals of about five months. The first series gave 5 maltose-fermenting variants out of 21 isolations; the second, 5 out of 60; the third, 1 out of 123. The other single-cell cultures as well as the parent culture render maltose alkaline. The non-fermenting type produces secondary colonies consisting of normal and involution cells, either of which may develop acid or alkaline producing cultures. An ordinary transfer from a secondary colony, including many cells of both sorts, gives an acid-forming culture. Selection from the acid-producing type failed to produce any but similar types, and selection from the alkaline-producing type gave only alkaline, provided secondary colonies were not chosen. Mixed cultures, consisting of an equal number of cells of each type, showed that the two types may exist side by side through from 10 to 15 daily transfers, but with a tendency for the acid to outstrip the alkaline. Transfer to maltose broth gave no increase in the acid-producing power except in old cultures. Growth in various substances other than maltose failed to alter materially the characteristics of the two types. In a specific serum, the two types showed approximately the same agglutination. A permanent new race, characterized by morphologic peculiarities, was obtained by the selection of an aberrant cell from a culture of dysentery of the Shiga-Kruse type.

South Carolina Medical Association Journal, Seneca

April, X, No. 4, pp. 478-511

160 What We May Do for Infant and Child. W. Weston, Columbia.
161 What We May Expect from Physical Therapeutics in Medicine. A. R. Taft, Charleston.
162 High Purpose of Modern Medicine. T. A. Quattlebaum, Columbia.
163 Surgical Clinics in Europe. H. A. Royster, Raleigh, N. C.

Southern Medical Journal, Nashville

May, VII, No. 5, pp. 349-430

164 Investigation of Malaria in United States by Public Health Service. R. H. von Ezdorf, Mobile, Ala.
165 Malaria as Public Health Problem. H. H. Shoulders, Nashville.
166 *Treatment and Cure of Malaria. C. C. Bass, New Orleans.
167 *Malaria During First Three Months of Life. B. H. Booth, Drew, Miss.
168 *Some Factors in Prevention of Malaria. W. H. Deaderick, Hot Springs, Ark.
169 *Quinin Fast Malarial Parasites; Memorandum. H. R. Carter, Baltimore.
170 Some of Nervous Diseases of Infancy. W. F. Boggess, Louisville, Ky.
171 Vascula Hypertension and Associated Nervous Symptoms. J. A. Hodges, Richmond, Va.
172 Roentgenographic Apocalypses in Chronic Constipation. E. S. Sledge, Mobile, Ala.
173 *Management of Raw Surfaces in Peritoneum. L. E. Burch, Nashville.
174 Gall-Stones Complicating Pregnancy and Puerperium. Report of Six Cases. J. Graham, Durham, N. C.
175 Thyroglossal Cyst and Fistula. Report of Four Cases. H. B. Gessner, New Orleans.
176 Relation of Lateral Sinus to Mastoid Operation. A. O. Pfingst, Louisville, Ky.
177 Rupture of Uterus. W. W. Crawford, Hattiesburg, Miss.
178 Ethics of Sex, or Plain Talk on Eugenics. L. A. Stone, Memphis.
179 Anterior Lens Surface. U. S. Bird, Tampa, Fla.
180 Prevention of Complications of Gonorrhea. C. O. Abernethy, Raleigh, N. C.

166. Abstracted in The Journal, Dec. 20, 1913, p. 2269.

167. **Malaria During First Three Months of Life.**—In children during the first three months of life, the first clinical manifestation of malaria, Booth says, is usually the finding of the child asleep with a high temperature. It may

or may not have been cross or irritable, but usually, if it has been the fact, it has been overlooked by the family. On waking him, he is exceedingly cross and irritable, jumping from the slightest noise; he is usually very much nauseated, the stomach rejects everything as soon as it reaches it. The temperature rises rapidly, the pulse is at first full and strong, but as the temperature rises it becomes weak and thready; the skin is dry and hot, feeling almost parched to the touch; the respiration becomes rapid and shallow; the patient is constantly moving his hands and feet, rolling his head from side to side if old enough, and if the fever exceeds 103 F. there are usually convulsions, followed by coma. Owing to the unstable equilibrium of the nervous system, all of the nervous symptoms of a malarial attack are exaggerated, and when the infant begins having convulsions, or goes into a state of coma, unless the fever is speedily reduced and the nervous system fortified, death results in a short time. When the infant has been tided over the paroxysm and the immediate danger of death is passed, it is usually found very much debilitated. The child's appetite is now variable; sometimes the stomach is still irritable and easily nauseated, the stools become frequent, watery and have an offensive odor; emaciation is rapid, resulting if untreated, in a speedy death. A microscopic examination of the blood will almost always reveal the malarial plasmodium. If not, the apparent leukocytosis in a case of this kind is almost pathognomonic.

Sometimes, instead of the onset occurring while the child is asleep, the first manifestation of the attack is a convulsion, which comes on without any warning, but after its onset the attack presents practically the same clinical symptoms as already described. Booth has seen these attacks occur in children only two weeks old. They occur most frequently in the late summer, being rare after cooler weather sets in. The treatment is outlined as follows: Cold baths to reduce the temperature, if practicable, and if not, then hot ones. Small doses of heroin and atropin, or morphin and atropin to control the convulsions and equalize the circulation. A good mercurial purgative followed by plenty of castor oil as hot as can be given; also plenty of quinin. After the acute symptoms have subsided, iron in such forms as to be easily assimilated, with essence of pepsin in appropriate doses will cause a quick recovery from the emaciated condition.

168. **Factors in Prevention of Malaria.**—There is one mighty weapon in the campaign against malaria which Deaderick says has been all but neglected in past campaigns, excepting a recent one in California, and that is education. The public should be made familiar with the etiology of the disease, practical preventive measures, and especially with the public health significance of the latent or carrier stage. Many adult inhabitants of malarial sections of this country could not be educated up to practical malaria prophylaxis even with concentrated effort throughout a long life-time, but by devoting careful attention to their children and to their children's children a generation of malaria fighters would be bred.

169. **Quinin-Fast Malarial Parasites.**—When a man is suffering from a malarial infection which from time to time develops into malarial fever Carter points out that the parasites must exist in him during the interval between the attacks although not in sufficient numbers, or in such form as to produce an attack of fever. When enough asexual forms are produced from them to provoke systemic reaction, the relapse is produced. During the interval there seems no evidence that they, the parasites, exist in any other form than as we usually know them, or in any other tissue except the hematocytes, although of course, both are possibilities. The increase of asexual forms should come, then, from the proliferation of the parasites in the ordinary way, and the daughter-parasites should, more or less, partake of the characteristics, original and acquired, of those from which they spring.

In relapsing malaria quinin may be given during the attack sufficient to cure it and to destroy the greater part of the asexual parasites, so that there are not enough left to keep up the attack; it may be given between the attacks in the same doses, and continued some time without preventing the relapse—that is, without killing all the parasites, enough escaping to proliferate later and produce the relapse with an abundance of asexual forms in the cutaneous circulation. The great bulk of the parasites in such relapses are destroyed by ordinary full doses of quinin, but a small number (too small to produce malarial fever and generally too small for asexual forms to be found in the blood) are not killed by them. These, Carter says, are the so-called "quinin-fast" parasites. Two hypotheses are advanced by Carter: 1. The parasites that survive are less susceptible than normal to the action of quinin. 2. They are less accessible to it than normal.

173. **Raw Surfaces in Peritoneum.**—It is essential that all raw surfaces in the peritoneum be covered or protected. The best method is to bring the edges together with a running suture, and if time permits, to use a second suture to reenforce and cover over the first. The use of sutures is not applicable to over 50 per cent. of cases, and in those cases in which sutures cannot be used, Burch says, preference should be given to peritoneal or omental grafts. In cases of general peritonitis, associated with raw surfaces, time is an important element, and a finished technic is unwise. In this class of cases Burch uses warmed camphorated oil, 1 per cent. The method of Richardson should be used in those cases with raw surfaces on the intestine, provided of course, the intestine has a mesentary sufficiently long. Sumners' method of using the sigmoid to cover raw surfaces in the pelvis, Burch says, is indicated in a small proportion of cases. All oozing surfaces should be touched with alcohol or the cautery to prevent infection. Sterile vaseline has an inhibitory influence on adhesions, and if time does not permit of other measures, it should be used.

Texas State Journal of Medicine, Fort Worth

May, X, No. 1, pp. 1-44

181 *New Technic for Total Hysterectomy in Difficult Cases. A. C. Scott, Temple.
182 Primary and Secondary Blood-Clot in Mastoidectomies. R. W. Moore, Fort Worth.
183 Traumatic Injuries of Crystalline Lens. R. H. T. Mann, Texarkana.
184 Vernal Conjunctivitis; Its Symptoms and Treatment. L. H. Lanier, Texarkana.
185 Case of Melanotic Sarcoma of Chorioid. J. Mullen, Houston.
186 Intestinal Toxemia and Senile Cataract. H. L. Hilgartner, Austin.
187 Antitoxic Influence of Thyroid. J. W. Rawls, Thornton.
188 Epilepsy. W. J. Mathews, Abilene.
189 Superficial Urine Examination. W. F. Thomson, Beaumont.
190 Plea for More Care in Life-Insurance Examinations. I. McNeil, El Paso.
191 Specific Infections of Uterus and Adnexa. A. F. Lumpkin, Amarillo.
192 Attitude and Practice of Present-Day Obstetrician. G. H. Lee, Galveston.
193 Surgical Treatment of Perforation in Typhoid. R. T. Morris, Houston.
194 Problem of Feeble-Mindedness. E. A. Wright, Houston.
195 Medical Defense. C. E. Mayes, San Angelo.

181. **New Technic for Total Hysterectomy.**—In the operation described by Scott, the patient is placed on the edge of the table, as if for lithotomy or vaginal hysterectomy, but instead of the limbs being fastened to the upright leg holders at the corners of the table in a position in which the thighs are flexed on the abdomen, the limbs are held so that the thighs are extended and widely abducted. Two operators are required, and the one who operates through the vagina either sits or stands, according to whether the abdominal operator desires the horizontal or the elevated position. Both operators begin simultaneously. The vaginal operator uses no knife at all, but surrounds the cervix with a cautery incision through the vaginal wall, made not far above the point of the cervix on the anterior side, to loosen the cervix from the bladder attachment. In the meantime, the abdominal operator has incised the abdominal wall, separated any adhesions to the uterus and appendages, packed off the intestines, ligated and severed the ovarian vessels and round ligaments and separated the bladder from the uterus, carefully approaching the cautery of the vaginal operation. By cooperation of the two the operation is carried to its termination in the manner described by Scott in detail.

United States Naval Medical Bulletin, Washington, D C.

April, VIII, No. 2, pp. 171-355

196 Typhoid Perforation. Five Operations, with Three Recoveries. G. G. Holladay, U. S. Navy.
197 Tschernogabow's Method for Obtaining Material from Syphilitic Lesions. E. R. Stitt, U. S. Navy.
198 Epidemic of Measles and Mumps in Guam. C. P. Kindleberger, U. S. Navy.
199 Feeble-Minded from Military Standpoint. A. R. Schier, U. S. Navy.
200 Towne-Lambert Elimination Treatment of Drug Addiction. W. M. Kerr, U. S. Navy.
201 Medical Experiences in Amazonian Tropics. C. C. Ammerman, U. S. Navy.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

May 2, I, No. 2783, pp. 949-1000

1 *Diagnosis and Treatment of Cerebrospinal Syphilis. P. Stewart.
2 Clinical Manifestations of Congenital Syphilis. H. Armstrong.
3 Clinical Importance of Cerebrospinal Fluid. W. Boyd.
4 *Meningitis in Children. W. M. Smith.

1. **Treatment of Cerebrospinal Syphilis.**—Improvement in the condition of the cerebrospinal fluid is a useful index of arrest of the disease, but, Stewart says, it must be remembered that, in general paralysis at least, the cell-count in the fluid may go down without any corresponding improvement in the mental symptoms. This is readily understood when one bears in mind that, even if the disease process be arrested, those nerve-cells and nerve-fibers which have been already destroyed, remain destroyed and cannot be regenerated. It is therefore of importance to select only those cases of general paralysis which are in the early or toxic stage of the disease, before the cortex has become profoundly degenerated. The earlier the disease is recognized, the better are the prospects of improvement. Advanced cases with profound cortical degeneration are totally unsuitable. The most thorough method of attacking general paralysis would be to administer remedies concurrently by all three routes—intravenously, intraspinally and intracranially. It is too early to claim that we yet possess a cure for tabes or general paralysis, but Stewart believes that in suitable cases, much can be done to arrest both diseases. Whether such periods of arrest are permanent, time alone will show.

4. **Meningitis in Children.**—In epidemic meningococcal meningitis the results of the intraspinous injection of a suitable serum, Smith believes, have justified the treatment, and the mortality has been reduced from 70 to about 20 per cent., and, indeed, might be lower were all the cases treated within the first two or three days. A large injection of Flexner's serum—about 20 c.c. even in a child—is given for two or three days, and repeated later if rapid improvement does not take place. In chronic cases with persistent headache and vomiting the injection of the serum is likely to be attended with satisfactory results. In the other forms of meningitis intraspinous injection of a serum is worth trying when the case is seen early, but the results so far are by no means satisfactory. In the chronic forms of meningitis due to syphilis, treatment is now being introduced in which the serum of a patient after treatment with salvarsan is injected into the spinal theca after the withdrawal of an amount of cerebrospinal fluid equal to that which is to be injected. Repeated lumbar puncture, in the hope of minimizing the evil effect of pressure, is indicated, especially in those cases which run a protracted course. In serous meningitis and meningism, lumbar puncture is generally attended with excellent results.

Hexamethylenamin is the drug which is most likely to be useful. It appears in the cerebrospinal fluid, and is said to have an inhibitory effect on the growth of organisms. It may be given in 10 grain doses every four hours, even in young children. Bromid and chloral, trional or morphin may be given as necessary for relieving headache and inducing sleep.

General treatment runs on the ordinary lines—a water bed, the child being moved as little as possible, tepid sponging, and the usual attention to the bowels. Persistent sickness in the chronic cases may be alleviated by washing out the stomach, and, if the vomiting persists, feeding with the nasal tube should be tried. The act of swallowing in some cases seems to cause a tendency to vomit, whereas the nasal tube passed below the pharynx has not this effect. During convalescence, so long as the tongue is clean and the bowels regular, a liberal diet should be given.

Indian Medical Gazette, Calcutta

April, XLIX, No. 4, pp. 129-168

5 Surgery of Tubercular Glands Based on 800 Operations in Kashmir Mission Hospital. A. Neve.
6 Insanity from Exhaustion. G. F. W. Ewens.
7 Analysis of Eighty-Nine Cases of Epilepsy in Punjab Lunatic Asylum. O. Berkeley-Hill.
8 Prophylaxis and Treatment of Pre-Eclamptic Toxemia and Eclampsia. S. Haughton.
9 Anoci-Association and Cancer of Cheek. E. W. C. Bradfield.

Journal of Tropical Medicine and Hygiene, London

April 1, XVII, No. 7, pp. 97-112

10 Meteorology of Malaria. M. D. O'Connell.
11 Brief Note on Toxoplasma Pyrogenes Castellani, 1913. L. Plate.
12 Note on Geographic Locality for Balantidicsis Coli. B. H. Dutcher.

Lancet, London

May 2, I, No. 4731, pp. 1233-1298

13 Modern Theories Concerning Hysteria. J. A. Ormerod.
14 Serio-Roentgenographic Diagnosis of Post Pyloric (Duodenal) Ulcer. L. G. Cole.
15 *Acute Lobar Collapse of Lung. H. L. Tidy and E. Phillips.
16 *Pain after Operation for Internal Hemorrhoids, and Its Prevention. P. L. Mummery.
17 *Early Detection of Diabetes by Simple Method of Estimation of Blood-Sugar. O. Kraus.

15. **Acute Lobar Collapse of Lung.**—Inaction of the muscles of respiration according to Tidy and Phillips is a cause of acute lobar collapse. Blockage of the bronchioles from capillary bronchitis may possibly have a similar result. The authors suggest that lobar collapse may explain cases of pleural effusion without corresponding displacement of the mediastinum and heart. In a case described, acute pleurisy occurred without changes in the lung. Inhibition of the muscles of respiration resulted in acute lobar collapse.

16. **Prevention of Pain after Operation for Hemorrhoids.**—Pain following operations for piles, Mummery says, can be prevented by applying the same principles that have enabled surgeons to avoid pain resulting from operation wounds in other parts of the [illegible] If a wound is made with no bruising or tearing of the tissues, under aseptic conditions, through clean tissues, and is kept aseptic and at rest, pain, except of a very slight and transient character, does not result. The anal region is no exception to this rule, and, given the same conditions, after-pain will be equally absent from operations in this region.

Careful attention to the details of aseptic technic must be observed in order to obtain success. The patient must be so prepared for operation that the rectum is quite empty and will remain so for some days. This is essential. The rectum and the whole of the field of operation must be washed out thoroughly with soap and water, and afterward with a suitable antiseptic, until the surgeon is satisfied that the area of operation is surgically clean. The sphincter should not be stretched or damaged in any way, and the patient must therefore be anesthetized thoroughly and deeply or the sphincter will be in a condition of spasm which will render it impossible for the surgeon to reach the piles properly. The operation must be carried out with as little damage to the tissues as possible. Pressure forceps should not be applied to tissues which are not going to be removed; the mucous membrane or skin at the anal margin must not be included in ligatures, and the number of ligatures applied for the control of hemorrhage must be reduced to the smallest possible number. After the completion of the operation the wound must be bathed with some suitable antiseptic, the best, in Mummery's opinion, being 1 in 40 phenol. Lastly, some form of dressing must be applied which will prevent infection of the wound. For this purpose Mummery has found sterilized vaseline to be the best, and the lower part of the rectum may be filled with this.

For the last ten years, he has been operating for piles on these lines, using the ligature operation in all but a few special cases, and has found that postoperative pain is not more severe or frequent than after operations for hernia or varicose veins.

17. **Early Detection of Diabetes.**—The analysis of blood-sugar is carried out by Kraus in the following manner: The pulp of the middle finger is thoroughly cleansed with ether and alcohol and a prick made with a Francke's needle, and about fifteen drops of blood are dripped into a special small glass receptacle. Then by means of a capillary pipette 1 c.c. is measured into a small beaker. The liquid in the beaker is cautiously heated, whilst stirring it up, until it begins to turn turbid. Then 4 to 5 drops of 10 per cent. ferrum oxydatum dialysatum duplex are added, and subsequently a few drops of a saturated watery solution of potassium sulphate, with constant soft boiling and stirring. All of a sudden the albumin will accumulate on the surface, while the liquid beneath will become absolutely clear. This liquid will hold all the *sugar contained in* 1 c.c. of blood. Two *gm. of sulphate of* copper are exactly weighed and dissolved in about 100 c.c. of water and cooled down. Then 400 gm. of sulphocyanate of potassium, 12 gm. of ignited carbonate of sodium, and 24 gm. of citrate of sodium are dissolved with the aid of heat in about 600 c.c. of distilled water and filtered. It is then cooled down and the copper solution added by slowly pouring it into the other solution with constant stirring. Five c.c. of a solution of 5 per cent. of ferrocyanid of potassium are now added and the whole is diluted with distilled water to exactly 1,000 c.c.; 0.165 gm. of pure glucose is dissolved in a flask that holds 100 c.c. and is provided with a mark. Then a double tube is inserted and the bottle, neck downward, is put into communication with a special buret by means of a rubber tube. This buret holds 1 c.c. divided into 100 subdivisions. Twenty-five c.c. of the cuprous solution, with 25 additional c.c. of distilled water, are measured into a beaker and heated; then the sugar solution, still boiling, is poured into the beaker, at first rapidly, finally drop by drop.

Kraus generally uses 3.35 to 3.36 c.c. to reduce 25 c.c. of the cuprous solution. The reaction is complete when the color changes from light blue to faint canary. The titration of the blood-sugar takes place on the same principle—25 c.c. of the standard solution are added to the blood filtrate and heated, and the end-point will be obtained by addition of the sugar solution. The difference between the result of the test titration and the amount of sugar solution that it was necessary to add to the blood filtrate, when multiplied by 0.165, gives the percentage of sugar in the blood.

Practitioner, London

May, XCII, No. 5, pp. 601-744

18 *Syphilis and Insanity. G. H. Savage.
19 *Use of Digitalis in Heart Disease. R. D. Powell.
20 *Glycosuria and Its Relation to Disease of Pancreas. P. J. Cammidge.
21 Some Aspects of Cholelithiasis. A. J. Blaxland.
22 Two Cases of Threadworms in Relation to Appendicitis. H. Lett.
23 Anemia in Childhood. R. A. Chisolm.
24 Random Notes in Children's Casualty Department. S. Smith.
25 Choice of Summer Health-Resorts. R. F. Fox.
26 Recent Work on Diseases of Heart. C. W. Chapman.
27 Treatment of Severe Menstrual Pain and Excessive Bleeding by Roentgen Rays. F. Hernaman-Johnson.
28 Toxemia and Autogenous Vaccines. W. B. Thorne.
29 Treatment of Neurasthenia. C. F. Fothergill.
30 Phylacogen Treatment of Rheumatism. A. B. Flett.
31 *Pancreatic Hemorrhage. G. T. D. Elder and D. Daniels.

18. **Syphilis and Insanity.**—Savage's experience, both in hospital and in private practice, is that syphilis is the dominant, if not the sole, cause of general paralysis of the insane. Syphilis may be a cause of congenital mental defect; it may be a cause of preventing healthy development of the brain; or it may interfere with development by the senses, and may thus lead to defective education. It may give rise to convulsions, which may either become established, as epilepsy, or may lead to mental weakness. It may also affect the moral development; and patients with a syphilitic inheritance have, in Savage's experience, not infrequently been morally defective in one way or another, and incapable of recognizing their social duties. Syphilis may cause hypochondriacal feelings, and the presence of stigmata may make the patient believe that he is a suspect, and may thus give rise to delusions of suspicion, melancholia and suicide. Congenital syphilis is almost certainly the cause of adolescent general paralysis. Ordinary general paralysis, locomotor ataxy with mental symptoms, are associated, in nearly all cases in Savage's experience, with a history of syphilis. Besides this, there are many forms of dementia depending on arterial degeneration which may produce general brain decay, or local troubles, such as softening or apoplectic seizures.

19. **Digitalis in Heart Disease.**—That digitalis is not efficient in all disease and disorders of the heart is emphasized by Powell. In acute injuries, such as rupture of the aortic valves, in such acute affections as pericarditis, endocarditis, myocarditis, it is of little or only of quite subordinate value. In chronic disease of the myocardium, of syphilitic, alcoholic or coronary origin, the use of digitalis is of secondary importance, and is often distinctly contra-indicated. It is in chronic valvular disease with failing power of ventricles that digitalis and, in a less degree, the class of drugs which it represents, are especially indicated; in fatigue of heart after acute disease or strain, it is also of great value.

20. **Glycosuria and Disease of Pancreas.**—The first essential, says Cammidge, in the treatment of all cases of glycosuria, is that the diet should be adjusted as accurately as possible to the metabolic powers of the patient, so that, while sufficient food is taken and absorbed to meet the requirements of the body, all unnecessary strain on the defective functions is avoided. Each patient is a law unto himself, as to the kind and quantity of food that can efficiently be dealt with and is best tolerated. One cannot argue from one case to another, or lay down rules that will be generally applicable. Diabetes is essentially a disturbance of the chemistry of the body, in which metabolism of carbohydrates, fats and proteins may all be involved, and to treat patients satisfactorily, one must ascertain their powers of dealing with each of these substances. The earlier in the course of the disease the treatment can be commenced, the easier will be the task and the more satisfactory the results.

31. **Pancreatic Hemorrhage.**—The interesting features of this case are cited by Elder and Daniels to be: the sudden onset of the acute symptoms after an interperiod of general malaise in a man previously healthy; the absence of any indication in the urine of pancreatic disease; the peculiar rash which appeared on the abdomen; the comparatively peaceful interval; and the rapid onset again of acute symptoms; there was no indication at the operation of fat necrosis, such as is usually described in such cases.

It seems to the authors that early operation in these pancreatic hemorrhages holds out the prospect of a much smaller mortality in this generally fatal complaint.

Sei-I-Kwai Medical Journal, Tokyo

April, XXXIII, No. 4, pp. 21-26

32 Calcium Chlorid for Erysipelas. S. Kawakami.
33 Clinical Pathology and Diagnosis of Diseases of the Knee-Joint. D. Matsuoka.
34 Surgical Treatment of Acute Diffuse Suppurative Peritonitis. M. Yasuda.
35 Injury of Intestine and Irrigation for Acute Suppurative Peritonitis. K. Goto.
36 Local Anesthetic for Bubo Operation. S. Honma and M. Kitagawa.
37 Simple Operation for Bubo. K. Kuroiwa.
38 Roentgen Ray for Chronic Eczema and Acute Inguinal Lymphadenitis. S. Doi.

Archives Internationales de Chirurgie, Ghent

VI, No. 4, pp. 369-452. Last indexed March 28, p. 1053

39 *Improved Technic for Correction of Club-Foot. (Tarsectomie pour pied-bot.) C. Willems.
40 *Cancer of the Prostate. P. J. Freyer.
41 Plexiform Neuroma. D. Taddei.

39. **Tarsectomy for Talipes.**—Willems cuts out the skin over the region as the first step, leaving a pear-shaped gap tapering to a point at the heel. Then he removes the astragalus; this corrects the equinus. Then he resects more or less of the calcaneum as needed, and slides the cuboid bone backward into the place of the astragalus and sutures the skin in a single linear suture. By this means the various factors of the deformity are corrected in turn, and the soft parts develop to form a false joint between the cuboid and the tibia, which restores approximately normal functioning to the foot. Almost all forms and degrees of talipes can be readily corrected by this technic, he says. He gives an illustrated description of it, adding that the linear scar and perfect functioning in the 200 cases in which he has applied the method justify its wide adoption.

40. **Cancer of the Prostate.**—Freyer states that he found malignant disease in 13.4 per cent. of the 1,276 cases of enlargement of the prostate in his private practice in the last eleven years. The symptoms are those of ordinary enlargement only that they have appeared and developed in the course of a few months instead of coming on gradually in a few years. This briefer course is very suspicious for cancer; still more if the patient has felt weak and languid, with little appetite, and if he has pains in the sacrum, loins or one or both thighs, along the urethra or in the perineum, and if he has pains in one or both buttocks when he sits down. The patient usually ascribes these pains to "rheumatism." His tongue may be glazed, red and dry, the urine pale and of low specific gravity. Hematuria is extremely rare with cancer of the prostate, and occurs usually only in the advanced stages. In exceptional cases there may be a few drops of blood passed before micturition or independently of it. Profuse hematuria is more a sign of simple adenomatous enlargement of the prostate. When the cancer develops in a previously enlarged adenomatous prostate, and the malignant growth is still confined within the capsule of the gland, the prospects for a complete cure by prostatectomy are favorable, as he shows by eight typical cases related. The article is in English but is not illustrated.

Journal de Médecine de Bordeaux

April 26, LXXXV, No. 17, pp. 277-290

42 *The Mediastinal Syndrome; Two Cases. Creyx.

42. **The Mediastinal Syndrome.**—Creyx emphasizes the importance of treatment for syphilis when confronted by a chronic mediastinitis in an adult. In children the lower part of the mediastinum or the upper part may be involved when symptoms call attention to this region; the inflammation can generally be traced to lesions in the tracheo-bronchial lymph-nodes. In adults the upper portion alone is more liable to be affected, and the source of the trouble may be discovered in the aorta, esophagus, etc. But it may be the only localization of some infection, usually syphilis, and specific treatment may speedily cure the threatening syndrome. In one of the two cases described the chronic superior mediastinitis in a man of 56 proved to be the work of an aneurysm of the aorta in an old syphilitic. The aneurysm had compressed the superior vena cava and a main bronchus. In a second somewhat similar case the symptoms indicated compression of nerves instead of the vessels. Specific treatment will eliminate the syphilitic factor and may cure even when there are severe disturbances from compression of the recurrent nerve, bronchi or esophagus, with reflex tachycardia and spasmodic cough. The sympathetic nerve is usually spared and hence there are no pupil anomalies or vasomotor phenomena in the face.

Presse Médicale, Paris

April 22, XXII, No. 32, pp. 301-308

43 Indications and Contra-Indications for Digitalis Deduced from Its Action on Blood-Pressure and Diuresis. (Quand et pourquoi il faut administrer la digitale.) A. Martinet.

April 25, No. 33, pp. 309-320

44 Technic for Exploration of the Right Hypochondrium. (Technique des explorations régionales: l'hypocondre droit.) F. Lejars. Twenty-four illustrations.

Revue de Chirurgie, Paris

April, XXXIV, No. 4, pp. 401-552

45 Conditions in which It Is Necessary to Resect the Intestine in Operating for Hernia. E. Quénu and H. Constantini.

46 *Chronic Pancreatitis. (Les pancréatites non biliaires.) J. Walter-Sallis. *First part in XXXIII, No. 12.*

47 *Clinical and Experimental Study of Traumatic Backward Dislocation of the Knee. P. Hardouin. First part in XXXIII, No. 12.

46. **Chronic Non-Biliary Pancreatitis.**—Sallis states that he found only two cases of diabetes mellitus among 250 cases of chronic pancreatitis which he has compiled. On the other hand, he found glycosuria in 11 of 13 cases of syphilis of the pancreas. He noticed it also in a few cases of tuberculosis of the pancreas. The diagnosis of chronic non-biliary pancreatitis is based on a history of digestive disturbances with pains in the epigastric region and right hypochondrium, less frequently in the left; the rapid and considerable loss of flesh; the anemia which accompanies the emaciation; a slight suggestion of jaundice; fat in the stools; slight bulging above the umbilicus, and rigid rectus muscles. The head of the pancreas can be felt hard and knobby, possibly tender and tumefied. When the stomach is inflated, the tumor vanishes. Complications on the part of the bile ducts, intestines and pylorus are by no means rare, as they suffer from compression by the enlarged head of the pancreas. Sallis relates a number of such case-histories from his own experience and summarizes forty-four from the literature. He says in regard to treatment that a mere exploratory laparotomy may induce the retrogression of pancreatitis in its early stage. This has been done in nineteen cases and with success in all. In a farther advanced stage, thorough retropancreatic drainage has proved effectual in some cases, both for biliary and non-biliary pancreatitis. If the common bile duct is entirely occluded, the pancreas will have to be cut to release the duct from the bed of sclerous tissue in which it is being smothered. The chronically inflamed pancreas bleeds easily and profusely so that this pancreatotomy had better be done extremely cautiously with the actual cautery. As a rule the pancreas recuperates after an operation very slowly, two, three or nine months sometimes being required. He reports a case in which the symptoms of pancreatitis returned a month after the operation. The pancreas was drained and the patient had apparently entirely recovered, when the pancreas syndrome flared up anew for a few days but then subsided completely.

47. **Backward Dislocation of the Knee.**—Hardouin concludes his long study of this subject by giving full summaries of the seventy-eight cases he has found on record and one from his own experience. In ten cases it proved impossible to reduce the dislocation immediately after the accident. The reason for this was generally that the internal condyle of the femur had been forced through the muscle and fascia and was held firmly in the button-hole thus made. Factors preventing reduction can be suspected when the patella is held immovable against the external condyle, when considerable abduction of the leg on the thigh is possible, and when there is a round hollow in the skin at the interline of the joint. Expectant treatment when reduction at once was impossible gave but mediocre results in the one case in which it was applied. The leg was amputated in one case; resection in another gave good functional results. In seven cases the joint was opened to correct conditions with fine results in three and fair in two cases. Infectious complications followed in two. When the dislocation is of long standing and the patients have learned to get along with it, there is not much use in interfering. The longest interval after which reduction was possible by the ordinary technic was two weeks; Küster found it impossible in one case at the ninth and Reisinger at the seventh week. Hardouin discusses the treatment applicable to the various complications that may arise at the time or later, especially from functional insufficiency of the ligaments. In seven of the cases the dislocation had occurred years before; one man of 70 referred it to a fall at 9 months. In four in this group the deformity was pronounced but did not interfere with

the earning capacity. Another gradually regained the use of his leg after having been bed-ridden from it for two years. Another had to have the limb amputated. Another could use her leg without trouble by wearing a bandage to keep the bone from slipping sideways. The dislocation should be reduced as promptly as possible on account of the danger from compression of nerves and vessels. An almost certain sign of this type of luxation is the horizontal position of the patella with complete dislocation, and nearly horizontal in the incomplete form. This sign is most instructive when the leg is stretched or bent upward.

Revue de Gynécologie, Paris

March, XXII, No. 3, pp. 161-272

48 *Ovarian Treatment. (Lipoides homo-stimulants de l'ovaire et du corps jaune.) H. Iscovesco.
49 Technic for Suture of Severed Ureter. (Urétérorrhaphie dans les sections totales de l'urétère.) P. Sejournet.

48. **Ovarian Treatment.**—Iscovesco called attention in 1910 to the specific physiologic properties of lipoids which can be extracted from some of the organs with an internal secretion. These lipoids seem to act as chemical messengers inducing a kind of autoregulation of the functioning of certain organs. Some seem to stimulate the organ from which they are derived; others act on other organs. Repeated injection of the lipoid extracted from the organ of another individual of the same or another species induces hyperfunctioning and in time hypertrophy of the organ in question. He here reports experiments with the lipoid extracted from the ovary and corpus luteum. It is a homostimulator; that is, it acts mainly, if not exclusively, on the female internal genital organs. He gives some illustrations showing the way in which the ovaries and uterus of rabbits developed under its influence to twice or thrice the size of those in the controls. In 48 cases of painful dysmenorrhea he injected the extract on alternate days for two weeks before the menses, and all but 8 of the patients had no further pain thereafter; in 6 of the refractory cases the course was not complete. The organ therapy proved constantly effectual in 6 cases of amenorrhea and in a much larger number of cases of various disturbances from insufficient functioning of the ovaries. His extensive experience has demonstrated, he says, that injected lipoids do not induce phenomena of anaphylaxis. The aim being to exaggerate the normal functioning, treatment should be mild and gradual and long kept up. The lipoid used in his work was taken from sows, a kilogram of sow ovaries yielding after desiccation 17.3 per cent. of lipoids; among them he used only the alcohol-soluble group.

Revue de Médecine, Paris

April, XXXIV, No. 4, pp. 241-320

50 *Gerlier's Disease. (Kubisagari.) P. L. Couchoud.
51 Gallop Rhythm during and after Typhoid Fever. J. Mollard and A. Dumas. Commenced in No. 3.

50. **Gerlier's Disease.**—This is a peculiar nervous affection characterized by paresis, vertigo and ptosis. It attacks farm laborers and is known only in two localities, where it is endemic—on the Franco-Swiss frontier and in a district in the northern part of Japan. It was first discovered by Gerlier in 1884 and in recent years has been studied in Japan. The inhabitants of both regions are mostly hard-working peasants and the attacks come on only in the summer and when the patients are fatigued. Couchoud states that they last from one to ten minutes and the paresis involves the muscles of the limbs, back, neck, tongue, lips, jaw and eyelids. The head falls forward and there is such marked ptosis that the patient cannot see. The feet or hands cannot be lifted. There is no contracture. When cold weather comes on the attacks stop. The disease is found also in cats and cattle, and in both regions where it is known, the peasants live in close contact with their domestic animals. A small coccus, irregularly grouped and Gram-negative, has been isolated from the cerebrospinal fluid of patients, and when inoculated into cats has produced the disease. Thirty-two case-histories are given.

Revue Médicale de la Suisse Romande, Geneva

April 20, XXXIV, No. 4, pp. 233-300

52 Postappendicitic Cicatricial Pericolitis Cured by Early Operation. (Péricolite membraneuse.) P. Wanner.
53 *Surgical Experiences at the Balkan Wars. N. Guerdjikoff.
54 Enlargement of the Prostate Treated by Bottini's Method. C. Perrier.

53. **Experiences in the Balkan Wars.**—Guerdjikoff had charge of a hospital that cared for 2,289 wounded and 654 sick soldiers during the two campaigns, and here presents some of his impressions of modern warfare. Gunshot and shrapnel wounds are never aseptic, he remarks, but if the first aid measures are properly applied and the wounds treated humanely by surgeons and nurses, if the wounds are not infected by officious meddling, very few infections result. Some of the wounded were brought across the mountains in ox-carts, and many of the injuries, furrows burrowed by bullets or seton wounds, the bullet boring straight through limb, chest or lung, had healed spontaneously on the way. He found that several small incisions through the skin materially hastened the healing of gaseous phlegmons. They were common, and developed rapidly, the second or third day after the injury, and gangrene developed in the cellular tissue and especially around the vessels. By releasing the gas through multiple small incisions, there was no further pressure on the cellular tissue and vessels, and as the blood-supply of the region returned to normal the tendency to gangrene was averted.

He frequently found that the bullet had turned completely around in its passage through the tissues, the point turned backward. The most remarkable course was that of a Mannlicher bullet which hit the skull in the left temple, ran around the skull, passed through the muscles at the back of the neck, then through the lung and back muscles, stopping finally under the skin near the second sacral vertebra.

The guiding principles in military surgery, he reiterates, are to refrain from doing harm, and to release pus. Soldiers under 25 are not fully developed, and after 35 they cannot stand what they could before, but between these age limits the recuperating power is almost incredible, and mutilating operations are rarely needed. He operated only in 194 cases, including all in which he removed the bullet or sequesters under a local anesthetic or made large incisions to release pus. The mortality was scarcely 1 per cent. including all who died from a superposed infectious disease, cholera, smallpox or tetanus. He adds that 3 per cent. of the Bulgarian surgeons at the seat of war succumbed to disease; two were shot and about 1.5 per cent. were wounded. He estimates that about 110,000 of the fighting force were wounded and 60,000 of them died of their wounds or disease while 10,000 were left more or less incapacitated. Boiled water to which 3 or 5 per cent. of tincture of iodin had been added was used freely to flush wounds and pus pockets, and proved a blessed reliance. A salve of 20 parts of balsam of Peru in 80 parts petrolatum was also much depended on. The total absence of all septic complications he ascribes to these and to the systematic use of moist dressings, gauze dipped in a weak disinfectant solution.

Berliner klinische Wochenschrift

April 27, LI, No. 17, pp. 773-820

55 Experimental Rachitis. J. Koch. To be continued.
56 *Tuberculosis of the Liver in Two Children. A. Tietze.
57 Germ of Landry's Paralysis. E. Leschke.
58 Protective Ferments and Serodiagnosis. (Abderhalden'sche Dialysierverfahren.) C. Lange.
59 Theoretical Basis for Serodiagnosis. (Wirkt arteigenes Eiweiss in gleichem Sinne blutfremd wie artfremdes?) E. Friedberger and G Goretti.
60 Toxicity of Prepared Rabbit-Serum. (Giftigkeit isogenetischer und heterogenetischer Antihammelblut-Kaninchensera.) E. Friedberger and G. Goretti.
61 *Cancers Adapted for Radiotherapy. (Welche Carcinome eignen sich zur Behandlung mit radioaktiven Stoffen?) A. Koblanck.
62 Diathermia. L. Mann.
63 Technic for Preparing Albumin Milk. (Einfache Methode zur Bereitung eiweissreicher Milch.) M. Soldin.
64 Improved Technic for Determination of Occult Blood. (Die Blutprobe nach Boas.) L. de Jager.

56. **Liver Tuberculosis.**—Tietze remarks that tuberculous lesions are found in the liver in nearly every case of miliary tuberculosis, but primary tuberculosis of the liver is so rare that the very possibility is denied by some. In the two cases of liver tuberculosis described the patients were boys of about 5 with pulmonary lesions and one had a tuberculous affection in the heel and lymph-nodes in the neck. The liver became very much enlarged and also the spleen, but there was no fever and no tenderness. Ascites required tapping occasionally and the pulse was much accelerated. Omentopexy was done in each case and an excised scrap of the liver showed tubercle growth. There were no signs of tuberculous peritonitis in either. The operation did not seem to benefit but the liver affection is evidently of a torpid nature and the boys have kept in fairly good condition. A course of roentgenotherapy was also given and the children were kept systematically lying down out of doors, even in winter.

61. **Indications for Radiotherapy of Cancer.**—Koblanck discusses which cancers are amenable to radiotherapy and which offer no chance for success with it. In order for it to be promising it must be possible to apply the radio-active substances close to the cancer and so that the rays can act chiefly on the young cancer cells on the periphery of the growth. The production of soft rays must be prevented. There must be around the cancer, and especially beneath the ulceration, tissue that is capable of regeneration. The cancer must not be too extensive, and there must not be any metastasis in other organs nor any cachexia. Only when all these six requirements are complied with is there any prospect of successful treatment by radiotherapy of internal or superficial cancer. Under favorable conditions, he remarks in conclusion, he would give radiotherapy the preference over operative measures, especially for a cancer of the lip. He has applied radiotherapy in 77 cancer cases to date and has studied the effect in numbers of other cases in the hands of confrères. Of his total cases only 13 were in an operable condition and in 8 of these constitutional disease forbade surgical intervention. The best results were obtained with cancroids of the face, cancers of uterus, vagina and vulva, and cancers of the tonsil and parotid gland. The action of radio-active substances is far from being always brilliant, but under careful selection of cases the proportion of successes will materially increase.

Correspondenz-Blatt für Schweizer Aerzte, Basel

April 11, XLIV, No. 15, pp. 449-480

65 *Multiplicity of Tumors. (Ueber Multiplizität von Geschwülsten.) F. Egli.
66 *Cancer of the Bile Passages and Liver. (Krebs der grossen Gallengänge und die primaren bösartigen Geschwülste der Leber.) S. Saltykow.

April 18, No. 16, pp. 481-512

67 Traumatic Ear Disease and Workmen's Compensation. (Begutachtung traumatischer Ohraffektionen.) W. Lindt and R. Nager.

65. **Multiple Tumors.**—Egli states that one or more tumors were found in 966 of 4,765 cadavers at the Basel institute of pathologic anatomy in the last seven years. There were primary multiple tumors in 263; that is, in 27.2 per cent. The tumors were malignant and single in 534; benign and single in 169; one of each in 77; in all the others there were various combinations of multiple malignant plus benign growths or growths in various different organs. In Egli's material of those with four or more tumors 2 were men and 10 women; with two tumors, 31 men and 98 women.

66. **Cancer of the Bile Apparatus Outside of the Gall-Bladder.**—Saltykow quotes the records from some other clinics to show the comparative rarity of this form of malignant disease, and then gives the necropsy details of a number of cases from his own experience in Switzerland. His list includes 9 primary carcinomas of the bile ducts; 8 of the liver; one case of both carcinoma and sarcoma in the liver, and 2 of sarcoma in the liver. In the bile-duct cancer cases, 2 of the patients were 34 and 35 and 2 over 75. Death occurs early, as the ducts soon become obstructed. All but one of the 19 cadavers were males.

Medizinische Klinik, Berlin

April 26, X, No. 17, pp. 711-752 and Supplement

68 *The Continuous Bath in Mental and Nervous Disease. (Anwendung des Dauerbades für Psychosen und Neurosen.) W. Weygandt.
69 *Operative Treatment of Stomach Disease. (Magenchirurgie.) J. Schnitzler. Commenced in No. 16.
70 Complications of Nasal Disease. (Die okulo-orbitalen, intrakraniellen und cerebralen Komplikationen nasalen Ursprungs.) A. Onodi.
71 *Poisoning from Nitrous Gases. R. Tetzner.
72 *Effect of Shrapnel Explosions. (Zur Wirkung der Granatexplosion.) E. Miloslavich.
73 Technic for Serodiagnosis. (Zur Organfrage bei der Anstellung der Abderhaldenschen Reaktion.) E. Lampé and M. Paregger.
74 *Experiences with Friedmann's Treatment for Tuberculosis. (Beitrag zu dem Friedmannschen Tuberkulose-Heilmittel.) W. Treupel.
75 Reactivation and Transmission of Protective Ferments. (Versuche über Inaktivierung und Reaktivierung von plasmafremden Fermenten und ihr physikalisches Verhalten gegenüber dem Substrat.—Versuche über die Uebertragung der Abwehrfermente von Tier zu Tier und die Einwirkung von normalem Serum auf solches, das Abwehrfermente enthalt.) E. Abderhalden and L. Grigorescu.
76 Surgical Work by the General Practitioner. O. Nordmann. Commenced in No. 15.
77 Sparing and Training the Digestive Apparatus. (Schonung und Uebung als Grundlinien der Ernährungstherapie.) F. Heinsheimer.

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56. **Liver Tuberculosis.**—Tietze remarks that tuberculous lesions are found in the liver in nearly every case of miliary tuberculosis, but primary tuberculosis of the liver is so rare that the very possibility is denied by some. In the two cases of liver tuberculosis described the patients were boys of about 5 with pulmonary lesions and one had a tuberculous affection in the heel and lymph-nodes in the neck. The liver became very much enlarged and also the spleen, but there was no fever and no tenderness. Ascites required tapping occasionally and the pulse was much accelerated. Omentopexy was done in each case and an excised scrap of the liver showed tubercle growth. There were no signs of tuberculous peritonitis in either. The operation did not seem to benefit but the liver affection is evidently of a torpid nature and the boys have kept in fairly good condition. A course of roentgenotherapy was also given and the children were kept systematically lying down out of doors, even in winter.

61. **Indications for Radiotherapy of Cancer.**—Koblanck discusses which cancers are amenable to radiotherapy and which offer no chance for success with it. In order for it to be promising it must be possible to apply the radio-active substances close to the cancer and so that the rays can act chiefly on the young cancer cells on the periphery of the growth. The production of soft rays must be prevented. There must be around the cancer, and especially beneath the ulceration, tissue that is capable of regeneration. The cancer must not be too extensive, and there must not be any metastasis in other organs nor any cachexia. Only when all these six requirements are complied with is there any prospect of successful treatment by radiotherapy of internal or superficial cancer. Under favorable conditions, he remarks in conclusion, he would give radiotherapy the preference over operative measures, especially for a cancer of the lip. He has applied radiotherapy in 77 cancer cases to date and has studied the effect in numbers of other cases in the hands of confrères. Of his total cases only 13 were in an operable condition and in 8 of these constitutional disease forbade surgical intervention. The best results were obtained with cancroids of the face, cancers of uterus, vagina and vulva, and cancers of the tonsil and parotid gland. The action of radio-active substances is far from being always brilliant, but under careful selection of cases the proportion of successes will materially increase.

Correspondenz-Blatt für Schweizer Aerzte, Basel

April 11, XLIV, No. 15, pp. 449-480

65 *Multiplicity of Tumors. (Ueber Multiplizität von Geschwülsten.) F. Egli.

66 *Cancer of the Bile Passages and Liver. (Krebs der grossen Gallengänge und die primären bösartigen Geschwülste der Leber.) S. Saltykow.

April 18, No. 16, pp. 481-512

67 Traumatic Ear Disease and Workmen's Compensation. (Begutachtung traumatischer Ohraffektionen.) W. Lindt and R. Nager.

65. **Multiple Tumors.**—Egli states that one or more tumors were found in 966 of 4,765 cadavers at the Basel institute of pathologic anatomy in the last seven years. There were primary multiple tumors in 263; that is, in 27.2 per cent. The tumors were malignant and single in 534; benign and single in 169; one of each in 77; in all the others there were various combinations of multiple malignant plus benign growths or growths in various different organs. In Egli's material of those with four or more tumors 2 were men and 10 women; with two tumors, 31 men and 98 women.

66. **Cancer of the Bile Apparatus Outside of the Gall-Bladder.**—Saltykow quotes the records from some other clinics to show the comparative rarity of this form of malignant disease, and then gives the necropsy details of a number of cases from his own experience in Switzerland. His list includes 9 primary carcinomas of the bile ducts; 8 of the liver; one case of both carcinoma and sarcoma in the liver, and 2 of sarcoma in the liver. In the bile-duct cancer cases, 2 of the patients were 34 and 35 and 2 over 75. Death occurs early, as the ducts soon become obstructed. All but one of the 19 cadavers were males.

Medizinische Klinik, Berlin

April 26, X, No. 17, pp. 711-752 and Supplement

68 *The Continuous Bath in Mental and Nervous Disease. (Anwendung des Dauerbades für Psychosen und Neurosen.) W. Weygandt.

69 *Operative Treatment of Stomach Disease. (Magenchirurgie.) J. Schnitzler. Commenced in No. 16.

70 Complications of Nasal Disease. (Die okulo-orbitalen, intrakraniellen und cerebralen Komplikationen nasalen Ursprungs.) A. Onodi.

71 *Poisoning from Nitrous Gases. R. Tetzner.

72 *Effect of Shrapnel Explosions. (Zur Wirkung der Granatexplosion.) E. Miloslavich.

73 Technic for Serodiagnosis. (Zur Organfrage bei der Anstellung der Abderhaldenschen Reaktion.) E. Lampé and M. Paregger.

74 *Experiences with Friedmann's Treatment for Tuberculosis. (Beitrag zu dem Friedmannschen Tuberkulose-Heilmittel.) W. Treupel.

75 Reactivation and Transmission of Protective Ferments. (Versuche über Inaktivierung und Reaktivierung von plasmafremden Fermenten und ihr physikalisches Verhalten gegenüber dem Substrat.—Versuche über die Uebertragung der Abwehrfermente von Tier zu Tier und die Einwirkung von normalem Serum auf solches, das Abwehrfermente enthalt.) E. Abderhalden and L. Grigorescu.

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adipose tissue or paraffin if the same results can be realized with it. Whether this can be done depends, he says, on the size of the space to be filled. For various reasons the lower lobe cannot be immobilized so well by a filling, but it answers finely for the upper lobe, and by combining a filling to compress the upper lobe with resection of ribs, close to spine and sternum, to immobilize the lower lobe, the entire lung on one side can thus be shut off from functioning. This combination makes less demands on the patient, and the effect in his cases to date has been extremely good. He used a paraffin filling in two cases and found it satisfactory to date. In others he implanted adipose tissue to plug the space; it was taken from the patient himself in two cases, in three from other patients. Everything seems to indicate that the fat heals smoothly in place and maintains a durable compression. With this filling technic he insists that we are justified in applying immobilization treatment to recently developed and comparatively small cavities.

91. **Symptom of Cerebellar Abscess.**—Mann noticed that a child with cerebellar abscess causing deep somnolency, warded off persons attempting to rouse him by making defensive movements with the arm of the sound side alone. He did not use at all the arm on the side of the abscess, although it was not paralyzed or injured. The same tendency to refrain from using the arm on the diseased side was evident also in another patient convalescing from an operation for a cerebellar abscess. Mann found that a similar experimental experience was published by Luciani twenty years ago; he related that after removal of part of the cerebellum of a dog, if one ear was pinched with forceps the dog soon scraped off the forceps if it was the ear on the sound side, but he made no attempt to scrape it off if it was on the ear on the same side as the cerebellar lesion. Mann found that the patient used both hands to defend himself in a recent case of abscess in a frontal lobe. The means he took to elicit the defensive movements in these cases was holding the patient's nose.

Wiener klinische Wochenschrift, Vienna

April 23, XXVII, No. 17, pp. 497-544

95 *Chronic Tobacco Poisoning. (Chronische Tabakvergiftung.) H. Favarger.
96 *Differential Diagnosis of Substernal Goiter. K. Engel and R. Holitsch.
97 Disease of Aorta from Inherited Syphilis. H. Neugebauer.
98 Subdeltoid Hygroma. (Zwerchsackhygrom an der Schulter.) H. Lorenz.
99 Varices in Thoracic Duct. A. Priesel.
100 Psychology of Children. (Zur Kinderpsychologie und Neurosenforschung.) A. Adler.

95. **Experimental and Clinical Study of Chronic Tobacco Poisoning.**—Favarger has for years made a study of this subject and here gives the details of twenty-one cases of disturbances on the part of the heart from abuse of tobacco. Experiments on animals seemed to indicate that the nicotin element alone is responsible for them. The first sign of trouble is palpitations, and if the abuse of tobacco is not excessive this may be the only symptom. With continued abuse, arhythmia and intermittent or abnormally slow or fast pulse may follow with sensations of oppression, precordial distress, weakness and insufficiency of the myocardium, dyspnea, cardial asthma, Cheyne-Stokes, cyanosis and finally fatal paralysis of the heart. Types of all these are included in the cases he reports, six with fatal paralysis of the heart. It is his impression that abuse of cigar smoking has a more deadening influence, the senses and memory becoming less acute and the heart suffering more than from excessive cigarette smoking. With the latter the symptoms of abnormal excitability of the nervous system predominate. The dependence of certain gastro-intestinal disturbances on nicotin poisoning has been confirmed innumerable times, he says, by their coming and going parallel to abuse and abstention from smoking. They range from the common lack of appetite, diarrhea or constipation to extreme emaciation and gastric ulcer; the latter may be the direct result of defective blood-supply from vascular spasm or weak heart action, these factors possibly supplemented by swallowing the smoke and particles of tobacco. He knows of many cases of myocardium trouble from tobacco poisoning in which there are no signs of arteriosclerosis. The latter is common in nicotin poisoning but not so universal as some assume. The myocardium symptoms are those that correspond to fatty degeneration, but post-mortem examination is rarely permitted in cases of nicotin poisoning as they are generally encountered in private practice.

96. **Differential Diagnosis of Intrathoracic Goiter.**—Engel and Holitsch call attention to the abnormal width of the shadow cast by the organs above the heart and apparently below the thyroid when the enlarged thyroid extends downward behind the sternum. This abnormally wide middle shadow may extend beyond the inner third of the clavicle possibly to its middle. The trachea may also deviate from the middle line even in the neck, while the arch of the aorta is pushed also to one side or downward. As the patient swallows, the entire shadow of the middle portion rises from 0.5 to 1 cm. and then falls again; with an aneurysm there is not this displacement during swallowing. The edges of an aneurysm shadow show pulsation toward every direction but there is no pulsation evident in the shadow of a substernal goiter, or it is only propagated in one direction. The shadow of the goiter is always sharply defined from the lung while the shadow of a tumor generally extends more or less into the lung. The most instructive sign, however, is the rising up of the shadow or the area of dulness over the manubrium as the patient swallows. If the substernal goiter is fastened down by adhesions, even this sign may fail.

Zeitschrift für Kinderheilkunde, Berlin

XI, No. 1, pp. 1-80. Last indexed May 2, p. 1444

101 Radiographic Diagnosis of Different Forms of Stridor in Children. E. Rach.
102 Tests for Presence of Formaldehyd in the Urine after Administration of Hexamethylenamin. W. v. Breunig.
103 Spontaneous Gangrene of the Extremities in Two Children. A. v. Khautz.
104 *Exfoliating Dermatitis. B. Sperk.
105 Early Editions of Glisson's "De Rachitide." E. Ebstein.

104. **Exfoliative Dermatitis.**—Sperk describes fifteen cases of exfoliative dermatitis. It is a disease of the first few weeks of life. In several cases he examined the bladder contents bacteriologically, and in all these cases he demonstrated staphylococci both microscopically and by culture. In one case he found *Staphylococcus pyogenes albus* in the blood. The affection seems to belong, therefore, in the group of staphylococcic pyodermias and this explains why it is so easily transmitted and why isolation is so necessary in children's hospitals.

Grèce Médicale, Athens

XVI, Nos. 5-6, pp. 9-12

106 Functional Paraplegia of Traumatic Origin in Young Soldier. C. T. Manthos.

Gazzetta degli Ospedali e delle Cliniche, Milan

XXXV, Nos. 45-49, pp. 473-520

107 Operative Treatment of Abscess in Infant's Lung. (Intervento chirurgico per un ascesso polmonare in bambino lattante.) P. Pozzato.
108 The Insensitive Skin of the Arab. (La iposensibilita cutanea degli arabi.) M. Tortora.
109 Retrograde Incarceration of Hernia. L. Bozzotti.
110 Preventive Diphtheria Antitoxin Treatment. (Difterite e sieroprofilassi.) N. Bassi.
111 Spastic Paraplegia of Syphilitic Origin. A. de Blasi.
112 *Treatment of Pruritus. G. Thibierge.

112. **Pruritus.**—Thibierge remarks that with generalized pruritus internal measures to combat the intestinal fermentations, liver, uterus or kidney derangement or other trouble causing the diffuse toxic pruritus may be aided with pastes containing menthol or phenol. With localized pruritus, especially at the anus or vulva, more energetic local measures are needed, and he commends silver nitrate in particular, in quite concentrated solutions for anal pruritus, or even applying the nitrate pencil. This hurts for a few hours, but gives the greatest relief. He has found lumbar puncture, repeated two or three times, successful in general or local pruritus in

some cases absolutely rebellious to all other measures. It is not necessary to withdraw more than 3 or 4, or at most 6 c.c. of the cerebrospinal fluid.

Policlinico, Rome

April 19, XXI, No. 16, pp. 557-592

113 *Recovery from Osteomalacia under Epinephrin. (3 casi di osteomalacia curati col metodo Bossi.) T. Cavazzani.
114 Rapid Determination of Blood in the Stools. (Pronto metodo di ricerca quantitativa del sangue nelle feci.) D. Assenelli.

April 26, No. 17, pp. 593-628

115 Recent Progress in Therapeutics Is Based Mainly on Animal Experimentation. L. Verney.

113. **Epinephrin in Treatment of Osteomalacia.**—Cavazzani's three patients were women who had borne one or more children. The epinephrin treatment was commenced in the first case a week or so after the first symptoms which had come on with an acute onset a few days after delivery; the treatment was promptly effectual. The osteomalacia had developed not long after delivery in the second case, but two months elapsed before treatment was begun and it was not kept up regularly and the results were less striking than in the first case. The third was an old chronic case and irreparable lesions were already installed but marked improvement was realized.

Riforma Medica, Naples

April 11, XXX, No. 15, pp. 393-420

116 Intravenous Injections of Salvarsan and Neosalvarsan. L. Martinotti.
117 Primary Tuberculosis of the Tongue. (Caso di ascesso tubercolare della lingua.) G. B. C. Fulle.

Rivista Ospedaliera, Rome

March 30, IV, No. 6, pp. 269-316

118 *Magnesium Sulphate in Treatment of Chorea. (La corea di Sydenham trattata col metodo Marinesco.) A. Natali.
119 *Treatment of Traumatic Extravasation of Blood in the Knee. (Il metodo cinetico del de Thooris nelle emartrosi traumatiche del ginocchio.) U. Pasini.

118. **Magnesium Sulphate in Chorea.**—Natali has applied intraspinous injections of magnesium sulphate in seven cases of chorea minor and one of chronic chorea. The affection was of fourteen, twenty-five or sixty days' duration or from one to seven years. With the exception of one case in which the attacks were almost continuous, there were periods of remission. He injected from 1.5 to 3 c.c. of a 7 to 25 per cent. solution. Three of the patients were entirely and four nearly cured, but the chronic chorea did not seem to be modified. The improvement was gradual and progressive. A course of arsenic seemed to hasten the cure. This treatment naturally should be reserved for the more serious and rebellious cases.

119. **Treatment of Traumatic Hemarthrosis in the Knee.**—Pasini extols de Thooris' method of treatment which requires no operation, no appliances and no drugs, nothing but the skillful application of movements. The patient is kept on his back in bed, not allowing him to get up on any pretext or flex his knee, and the bed-clothes should leave the leg free. He should then raise his leg without bending it at the knee. This extension of the leg on the thigh has a direct curative action on traumatic extravasations in the knee. The leg should be lifted up until it is at a right angle to the horizontal body. At first the movement has to be done passively, and then be aided for a time until he can do it alone. The limb should be raised slowly and regularly and lowered in the same way, repeating the movement often but not to the point of fatigue, and distributing the movements at regular intervals over the day. During the intervals a wet pack is applied but without the least compression. It is useful also to contract the extensor muscles from time to time, even in repose. The sign that conditions have improved so that the patient can get up is when the patella slides out from the grasp of the finger and thumb holding it lengthwise, the leg hanging loose, when the patient contracts suddenly his extensor muscles. This occurs in normal conditions but the patella does not slide out from the grasp in this way when there has been extravasation of blood in the joint for some months. When first allowed to get up, the patient should complete the treatment by holding the joint stiff.

Tumori, Rome

III, No. 5, pp. 569-696. Last indexed April 11, p. 1209

120 Retroperitoneal Neuroma. (Neuroma gangliocellulare mielinico retroperitoneale.) G. Fichera.
121 Antigens for the Meiostagmin Reaction with Cancer. III and IV. C. Izar and P. Ferro.
122 Hypernephroma of Lower Pole of Kidney Causing Intestinal Symptoms and Cachexia. (Ipernefromi.) V. Saviozzi.
123 Chronic Mastitis and Benign Tumors. (Flogosi croniche e tumori benigni della mammella.) A. Cimoroni. To be continued.

Mitteilungen a. d. med. Fakultät d. k. Univ. Tokyo

XI, No. 1, pp. 1-196. German Edition

124 Ventrolateral Pyramidal Tract. (Zur Kenntnis der ventrolat. Pyramidenbahn Barnes und der Dreikantenbahn Helwegs. Zur Frage der Leitungsbahn im lateralen Markfeld der Olive und in der anterolat. Ruckenmarksperipherie.) S. Yamakawa.
125 Diaphragmatic Hernia. R. Watanabe.
126 Anatomy of the Ear in the Japanese. (Aeusserer Gehörgang und Trommelfell der Japaner.) H. Iwata.
127 Bacillus in Acute Knee Process. (Zur Salmonellagruppe gehörigen Bacillus als Erreger einer akuten Kniegelenkentzündung. II.) S. Yamakawa.
128 Acute Lymphatic Leukemia. S. Yamakawa.
129 Mercurial Inunctions in Prophylaxis of Japanese Mycosis. (Tsutsugamushikrankheit. VI.) M. Ogata.
130 *Rat Bite Disease an Aspergillus Infection. Mercurial Inunctions in Prophylaxis and Treatment (Aetiologie und Therapie der Rattenbisskrankheit. III.) M. Ogata.

No. 2, pp. 197-308

131 Orthodiagraphy of the Heart in Healthy Japanese. A. Imamura and S. Nukada
132 Tetragenus Sepsis; Recovery. I. Yamakawa.
133 The Occipital Region of the Brain in the Japanese. (Ueber den Hinterhauptlappen des Japanergehirnes.) M. Hayashi and R. Nakamura.
134 *Function of the Thymus. I. S. Shimizu.
135 The Pepsin in the Urine. (Harnpepsin.) S. Okada.

130. **Rat-Bite Disease.**—Ogata's clinical and experimental research has confirmed the fact, he says, that a fungus with which the individual is inoculated when bitten by the rat is the cause of the clinical picture known as rat-bite disease. The fungus seems to be of the aspergillus family and to be readily destroyed by mercurial inunctions, improvement and complete cure following on a course of mercurial inunctions. The three cases here reported bring to eleven the cases he has encountered.

134. **Thymus Functioning.**—Shimizu found that the serum from rabbits treated beforehand with dog thymus caused marked destruction of thymus tissue when injected into young dogs, in addition to phenomena of anaphylaxis. There seems to be no doubt that the prepared serum contains an actual thymolysin. It acts on the dogs in a way similar to the disturbances in development which follow removal of the thymus in young dogs. The medullary portion of the thymus seems to have a different function from the cortex, and it is probably the medullary portion, he says, which secretes the internal secretion.

Brazil-Medico, Rio de Janeiro

April 8, XXVIII, No. 14, pp. 133-142

136 *An Endemic Adenomycosis in Brazil. (Nova molestia humana.) E. Dias.
137 *Morbidity of Rio. (Nosologia e mortalidade da cidade do Rio de Janeiro.) P. Barbosa and S. Vianna. Commenced in No. 11.

136. **Endemic Adenomycosis.**—Dias describes an affection of the lymph-nodes in the neck which is endemic in his district, Minas, and which can be reproduced in animals. Separate lymph-nodes swell enormously but never suppurate; the symptoms suggest leukemia or tuberculosis at first. The course is always fatal; sometimes in six or eight months, or not for two or three years. Potassium iodid seems to have benefited in one case at least. He has four under observation at present. A mycelium can be cultivated from fluid aspirated from one of the lymph-nodes affected, and inoculation of white rats kills them in a few days.

137. **Morbidity of Rio.**—In this review of sanitary conditions in Rio we note that the mortality from plague has

dropped gradually since 1903 from 48 per hundred thousand inhabitants to 0.81; leprosy keeps about the same, 2.09 in 1890 and 3.33 in 1912; beriberi has dropped from 16 in 1903 to 1.43 in 1912; diphtheria has ranged from 9.1 in 1868 to 43.4 in 1883. Then came a sudden drop to 6.5 in 1890; since then it has ranged from 1.3 to 6.4—the latter figure in 1912. There have been only 24 deaths in all from scarlet fever since 1903. The deaths from dysentery are what swell the mortality at Rio, the figures in 1869 being 41.68 and in 1912, 18.81. The general mortality has been 20.5 per thousand, surpassed by cities in Egypt, India and Russia, Naples and Trieste.

Semana Medica, Buenos Aires

March 26, XXI, No. 13, pp. 689-736

138 The Prognosis in Heart Disease. (Elementos de pronostico en los cardiacos.) J. Destefano.
139 Peculiar Reaction of Phosphorus with Silver Nitrate. (Nueva reaccion microquimica del fosforo.) Maestre and A. Lecha-Marzo.
140 Interstitial Keratitis. ((387 casos de queratitis intersticial.) J. Santos Fernandez.

April 2, No. 14, pp. 741-788

141 Amino-Acid in the Urine in Diabetes. (Las amino-acidurias de los diabeticos.) C. B. Udaondo and M. Casteigts.
142 Painful Epigastric Hernia with Gastric Ulcer and Cancer. A. G. Gallo.
143 Hypophysis Extract in Hemoptysis. B. A. Houssay.
144 Exostosis with Bursa. (Exostosis bursata.) J. F. Relcalde.
145 Operations on Stomach and Duodenum. (Comentarios sobre cirugia gastro-duodenal.) L. Mondino and D. Prat.
146 Mycelium in Biochemistry. (La micela en bioquimica.) J. R. Carracido.
147 Examination of Seminal Stains. (Todavia nuevos metodos para la demonstracion de los zoospermos en las manchas.) Maestre and A. Lecho-Marzo.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

LVIII, No. 1, pp. 1-77

148 Importance of Streptococci and Their Products in Various Infectious Diseases in Man and Animals. E. Bemelmans.
149 Fluorescent Reaction in Certain Urines. (Een nieuwe reactie in urine.) F. A. Steensma.

No. 2, pp. 78-149

150 Sterilization of Hands and Field of Operation. (Heelkundige aseptik.) I. H. Kuijjer.
151 Brain Tumor or Hysteria? (Hersengezwel of hysterie?) G. C. Bolten.

No. 3, pp. 150-236

152 *Catarrhal Pyelitis. (Nierbekkencatarrh.) A. Bijnen.
153 Duodenal Ulcer; Two Cases. (Zweer in den twaalfvingerigen darm.) J. de Groot.

152. **Catarrh of Kidney Pelvis.**—Bijnen is an advocate of direct medication of the kidney pelvis with a silver salt and states that twenty-two of the twenty-four patients he has treated in this way seem to be clinically cured. In the other cases there was a tendency to stone formation which kept up the irritation.

St. Petersburger medizinische Zeitschrift

April 14, XXXIX, No. 7, pp. 85-96

154 *Artificial Respiration in Case of Central Paralysis of the Respiration. (Künstliche Atmung bei zentraler Atemlähmung.) P. Bode.
155 *Application of Large Magnet in Gastro-Intestinal Derangement. G. Plotkin.
156 Concentrated Solutions of Salvarsan and Neosalvarsan. J. Grunberg.

154. **Artificial Respiration for Central Respiratory Paralysis.**—Bode's first patient was a man of 38 with a focus of softening in the third and fourth ventricles with resulting compression of the respiration center. The skull had been trephined on the assumption of an abscess in the brain, but the focus was not reached. An hour later respiration stopped completely but the heart was kept beating by artificial respiration for fifteen hours, when death finally ensued. The second patient was a woman of 29 with some organic brain process which caused sudden arrest of the respiration; she too was kept alive for fifteen hours by artificial respiration. There was no necropsy. The original Silvester method proved the simplest and most effectual in these cases, but when the artificial respiration has to be applied in the course of an operation, Bode prefers the Schuller technic on account of asepsis.

155. **The Magnet in Gastro-Intestinal Diseases, Etc.**—The Journal mentioned recently Payr's work with a large magnet applied to the abdomen after the patient has taken a suspension of fine iron particles. The magnet acting on the iron draws the loops of intestines around and lifts them up, and it is possible in this way to exercise them at will. Plotkin here extols the capabilities of the method, saying that it can be applied to dilate a stricture or diverticulum, to aid in correcting displacement of the uterus and in prophylaxis and cure of adhesions. He sees such a wide range of usefulness for the measure that he says he thinks that digestive diseases, at least, are entering on an era of "ferromagnetism." (See abstract 134, p. 171).

Hospitalstidende, Copenhagen

April 22, LVII, No. 16, pp. 481-512

157 Precipitation with Sodium Glycocholate in the Cerebrospinal Fluid Not a Reliable Test for Syphilis. (Om Fældningsreaktionere med glykocholsurt Natron ved Cerebrospinalvæske.) C. With.
158 The Filament Galvanometer and Electrocardiography. (Phonokardiogrammet.) O. V. C. E. Petersen.

Hygiea, Stockholm

April 1, LXXVI, No. 7, pp. 385-448

159 *Hemolytic Jaundice. (Hämolytisk ikterus.) O. Lindbom.

159. **Hemolytic Jaundice.**—After a comprehensive review of what has been published on this subject to date, Lindbom reports a case from his own practice. His patient was a young woman and the attacks of pain and intense jaundice were long attributed to gall-stones. Investigation revealed five other cases in the same family; three of the woman's sisters, her mother and her grandmother all had more or less jaundice and it dated from early childhood. There was also more or less anemia, with characteristic blood-findings; discovery of these other cases in the family threw discredit on the diagnosis of gall-stones, especially as the spasmodic pain was referred to the left side and no point of special tenderness could be found in the gall-bladder region. Even if an operation had revealed gall-stones, their removal would not have affected the main element in the syndrome, the excessive destruction of red corpuscles. A course of cholesterin treatment was instituted, a daily dose of 1.5 gm. cholesterin dissolved in oil. If this fails the spleen will be exposed to the Roentgen rays and, as a last resort, splenectomy will be proposed. Hemolytic jaundice may prove more common than now supposed. It is highly probable that many cases of it have been mistaken for gall-stone trouble; the decisive symptom is the reduced resisting power of the red corpuscles to hypotonic salt solution.

Ugeskrift for Læger, Copenhagen

April 23, LXXVI, No. 17, pp. 727-778

160 *Treatment of Puerperal Mastitis. (Om behandling af galactoforitis.) E. Hauch.

160. **Treatment of Puerperal Mastitis.**—Hauch describes the methods of treating inflammation of the milk ducts at the Copenhagen maternity. The child is allowed to nurse as long as it will, and then afterward the breast is massaged and milked entirely dry and heat is applied, or with a powerful breast-pump it is emptied dry and then an ice-bag is applied. None of the fifty-five cases treated with massage and heat came to an abscess; as a rule the temperature speedily dropped, although in ten cases there was a relapse later. There was a relapse in only eight of the seventy cases treated with vacuum suction and ice, so that the latter technic is now regarded as the best, especially as recovery proceeds more rapidly. An abscess developed in one of the ice-treated cases. None of the children seemed to suffer from the effects of the galactophoritis; in about a third of the first group of cases supplementary artificial feeding became necessary, and in about a fifth of the ice-treated cases (16 to 55 and 15 to 70). Massage is liable to do harm; it may rupture a distended milk duct in unskillful hands, while the vacuum-suction treatment can scarcely do harm under any circumstances, and it does not cause pain like the massage.

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HAS THE AMERICAN GYNECOLOGICAL SOCIETY DONE ITS PART IN THE ADVANCEMENT OF OBSTETRICAL KNOWLEDGE? *

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When casting about for a suitable subject on which to address you, it occurred to me to read all of the obstetric articles which have been contributed to the society since its inception, in the hope that their analysis might prove interesting to our older members and stimulating to the younger ones.

During the thirty-eight years of its existence, 1,010 papers have been contributed, 664 on gynecologic and 346 on obstetric topics, including extra-uterine pregnancy. Consequently, a little more than one-third (34.2 per cent.) fall in the latter category and were contributed by 128 persons. Of these, 53 made only a single contribution, 50 read from two to four papers each, 22 from five to nine, and 3 ten or more papers, so that somewhat less than one-fifth of the entire number were frequent contributors.

I found the task of reading the articles very interesting and fairly profitable, as they set forth in a more or less consecutive manner the history of obstetrics for the past forty years, and served to impress me anew with the great progress which had been made in the technical side of our art.

During this period we have witnessed many changes, the most far-reaching being the development of aseptic technic and the establishment of the bacterial origin of puerperal infection, as the result of which the lying-in hospital has been converted from the most dangerous to the safest place for the delivery of women. Every stage in the development of this doctrine can be traced in our *Transactions*. In the early volumes one finds articles showing that vaginal and intra-uterine douches could be administered with safety, along with other articles giving directions for the most rudimentary antiseptic technic.

It may surprise some of our younger members to learn that, so late as 1884, Albert H. Smith, in his presidential address, vigorously combated the bacterial origin of infection; and, on the other hand, that some members of the society took an active part in the transformation of the lying-in hospitals. For example, we read with pride of Garrigues' achievements in 1883 at the New York Maternity Hospital. In the first nine months of that year, thirty deaths from infection had occurred in 345 deliveries, but the changes which he so intelligently introduced effected such a revolution that during the last three months of the year not a single patient died, and only three of the ninety-five presented a rise in temperature. Furthermore, Polk told us that when he graduated in medicine, delivery in a lying-in hospital was far more dangerous than an engagement in the bloodiest battle, for, during his internship at Bellevue he saw forty-five women die out of the sixty who had been delivered during a single month.

In the papers of Garrigues and Jewett we can also trace the history and development of laparo-elytrotomy, the latter informing us that six women and seven children had been saved in eleven operations up to 1885. This operation is of great interest to students of medical history, as its invention by Thomas represents one of the very few American contributions to obstetrics; and its recent resuscitation under the guise of extraperitoneal cesarean section shows that his conceptions were well founded.

The conversion of cesarean section from "the most dangerous operation in surgery," to one in which the results are so good that it is in imminent danger of being abused by "knife-loving" obstetricians and by surgeons who know nothing of the resources of obstetrics, can be graphically followed. The early accounts of tardy operations for the removal of a dead child from an exhausted and infected woman stand in marked contrast to the first elective operation performed by Lusk in 1887, and particularly to the long series of successful operations which were afterwards reported by many of our fellows.

Following Harris' paper in 1892, entitled "The Remarkable Results of Antiseptic Symphyseotomy," we can trace the development and fall from favor of that operation, as well as the scant recognition accorded the usefulness of its sister operation, pubiotomy.

One of the most interesting phases of obstetric history is afforded by the fifty-one papers on extra-uterine pregnancy. In these we can trace the evolution of a pathologic curiosity into a condition of every-day occurrence. Furthermore, we can follow the education of the profession in its diagnosis, as well as the gradual development of means for its cure, first by electricity or by the injection of morphin into the sac, and later by surgical methods. We can likewise trace the development of the *furor operativus* to the point at which the diagnosis of the condition came to mean immediate operation without regard to the condition of the patient, until Robb's experimental work demonstrated the fact that interference might frequently be deferred with benefit to the patient.

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* Presidential address, delivered before the American Gynecological Society, 1914.

Many other changes can be followed with interest and profit; for example, the slow recognition of the fact that occiput-posterior presentations should not be regarded as abnormal, but that, if left alone, they will usually terminate spontaneously with but little greater difficulty than when the occiput is directed anteriorly.

We can also follow the evolution of more correct views concerning the employment of forceps and the recognition of the fact that its improper use is a potent factor in the death of the child and in the production of serious lesions on the part of the mother. Likewise, we can read the discussions concerning the value of axis-traction; but, just as its merits were beginning to be recognized, its field of usefulness became markedly restricted by the knowledge that it is not the ideal means of overcoming mechanical obstruction.

It is interesting to recall the fact that, in the early days of the society, not even trained obstetricians were agreed as to the necessity for the immediate repair of birth injuries; for, at the first meeting in 1876, Goodell contributed an important communication setting forth the innocuousness and desirability of routine perineal repair.

I might continue to recount many other advances in the practical treatment of childbirth and its complications, but time will not permit. Consequently, I shall refer only to the abuse of ergot. Its employment was considered on several occasions in the early days of the society, when the consensus of opinion developed that it was indicated only after the extrusion of the placenta. It may also interest you to be reminded that it was frequently administered so freely in the treatment of abortion as to give rise to chronic ergot poisoning, and that John Goodman reported an instance in which it had led to gangrene of the extremities. I lay stress on this almost forgotten fragment of medical history, for I believe that unless correct teachings concerning the action of and the indications for the use of the various preparations of pituitary gland substance soon become current, a similar crusade will be necessary to check the abuse of this powerful therapeutic agent.

After listening to this imperfect enumeration of the advances of obstetrics as portrayed in our *Transactions,* one's first impulse is a feeling of pride in the achievements of his colleagues and a sense of satisfaction with the part we have played in developing this branch of medicine. Closer and candid consideration, however, compels the depressing confession that such feelings are not justified, but that, on the contrary, we have done virtually nothing in developing even the practical side of our art. We have been content merely to follow in the footsteps of others, occasionally quite sluggishly, and to reap what we have not sown.

Careful analysis of our *Transactions* has failed to convince me that scarcely a single, fundamental contribution to practical obstetrics has been made to this society, and I feel that you will agree with me when you hear the facts.

We did nothing fundamental in connection with the question of puerperal infection; Holmes, Semmelweis, Pasteur and Tarnier laid its theoretic foundations, while the practical utility of antiseptic precautions had been demonstrated in Germany and France before we seriously faced the matter.

The modern cesarean section originated in Germany, and five years elapsed after the publication of Sänger's monograph before we were able to report a single, successful operation.

The same may be said of symphyseotomy and pubiotomy; and it was not until after Harris had called attention to the results obtained in Italy and France that we showed signs of being aware that the operation had been successfully resuscitated. Even in connection with extra-uterine gestation we have little reason to be proud, as the operation after rupture came to us from Tait, and Veit had given directions for diagnosticating unruptured tubal pregnancy four years before the subject was mentioned before this society.

Likewise, our views concerning the mechanism of labor in occiput-posterior presentations were woefully behind the times; and it required years for us to reach the position which Naegele had attained in 1838. Naturally, it might have been supposed that the mechanical ingenuity of this nation would have led to improvements in the forceps; but not so. While we were inventing narrow-bladed instruments which might be applied through a cervix the size of a five-cent piece, Tarnier had worked out the principle of axis-traction, which we accepted only after considerable hesitation.

I shall not continue this doleful list, as it seems sufficient to prove that we have added practically nothing to the technical side of obstetrics, while the analysis which I am about to present will show that we have done even less on the scientific side.

For purposes of analysis, I have classified the 346 obstetric papers into thirty-two groups, as shown by the accompanying table.

ANALYSIS OF THE OBSTETRIC PAPERS, 1876-1913

Subject	No. Papers*		
	Total	Cred.	Exc.
A. Pregnancy—			
1. Abnormalities of	20	3	2
2. Complicated by tumors	13	1	0
3. Operations during	2	0	0
4. Physiology of	11	2	3
B. Labor—			
5. Abnormalities of	8	0	2
6. Conduct of, including anesthesia and oxytocics	29	5	1
7. Mechanism of	2	0	1
8. Physiology of	1	0	1
C. Puerperium—			
9. Abnormalities of	5	0	0
10. Normal	6	0	1
11. Infection during	25	3	1
D. Lacerations, etc.—			
12. Lacerations of cervix	5	1	0
13. Lacerations of perineum	9	2	0
14. Rupture of uterus	8	0	0
15. Vesicovaginal fistula	1	1	0
E. Instrumental Delivery—			
16. Operative technic	1	0	0
17. Accouchement forcé and the induction of labor	12	1	0
18. Cesarean section	25	2	1
19. Forceps	6	0	0
20. Gastro-elytrotomy	2	1	0
21. Pubiotomy and symphyseotomy	7	3	1
22. Version	2	0	0
F. Abortion—			
23.	2	0	0
G. Extra-uterine pregnancy—			
24.	51	7	5
H. Eclampsia, toxemia and vomiting—			
25	28	3	2
I. Contracted pelvis—			
26.	7	2	3
J. Hemorrhage—			
27. Accidental	1	0	0
28. Post-partum	3	0	0
29. Placenta praevia	17	1	1
K. Displacements of uterus—			
30.	7	0	1
L. General Topics—			
31. Child	10	2	0
32. General	20	2	1
	346	42	27

* The first of these columns indicates total number; the second, the number of creditable papers, and the third, the number of excellent papers.

With as little bias as possible, I have attempted to form a judgment as to the value of the papers, and have designated as good or creditable those in which the subject under consideration was presented in a useful and attractive manner, but without adding anything new, and as excellent such papers as have contributed, even to a slight extent, to the sum total of obstetric knowledge. Judged by these criteria, I have placed forty-two papers in the former and twenty-seven in the latter category — 12 and 8 per cent., respectively. Consequently, it would appear that on the average less than two creditable papers have been contributed each year and that only two contributions could be expected in three years. Surely this is not a showing of which our society can be proud.

On the other hand, I would call attention to the fact that seventy papers, or somewhat less than one-fifth of the entire number, were purely casuistic in character, and were based on the history of one or at most two cases. Though often interesting, papers of this character are usually of little value and are better suited for presentation before a local medical society than before a national association supposedly composed of scientific men.

Most of the remaining 207 papers were unobjectionable, yet, while sometimes provocative of interesting discussion, they served merely as vehicles for the expression of the personal experiences of their writers. A small number, including an occasional thesis for admission, were valueless and sometimes puerile. In general, these papers were practical in character and dwelt but little on the scientific or theoretic aspects of the subject. Many of them were based on an experience too small to justify authoritative conclusions and were such as might be expected from young assistants after a few years' service in a well-conducted clinic. It would appear that their chief function was to afford the authors an opportunity to air their views at the expense of the society on topics of more or less general interest and to educate the general practitioner, rather than to stimulate the free exchange of thought between competent experts with a view to broadening their field of vision and increasing the general store of knowledge.

Reverting to the analysis of the papers, I found six creditable and four excellent communications among the forty-six included in the four groups devoted to pregnancy (*A*). I was greatly surprised, however, at the dearth of papers on many important subjects. For example, there was an entire absence of reference to the biologic and biochemical aspects of pregnancy, and, with the exception of a demonstration by Minot, no mention was made of the fundamental problems connected with placentation. Nothing was said of normal metabolism during pregnancy, and, had we been dependent on the society for information, we should have been unaware of the significance of Abderhalden's pregnancy reaction.

Furthermore, only once during the life of the society has reference been made to the importance of syphilis in connection with the child-bearing process, and that only in an incidental manner. As my own experience leads me to believe that this is the most important single factor concerned in the death of the fetus during the last three months of pregnancy, I feel that, had we been alive to our responsibilities, we should have had numerous communications concerning the bearing of the discovery of the spirochete and the Wassermann reaction on the validity of the laws of Colles and Profeta, as well as on the practical aspects of prophylaxis and treatment.

In the four groups, including the various phases of labor there were forty articles (*B*), of which five were good and the same number excellent. Most of these dealt with the purely practical aspects of mechanical delivery. On the other hand, no mention was made of our ignorance concerning the causation of labor or of the physiology of uterine contractions, and, although a number of writers dealt with the management of abnormal presentations, only one made a contribution to the mechanism of labor, and another to the anatomy of the parturient soft parts. Did time permit, many other important problems might be mentioned which have been left entirely untouched.

Of the thirty-six articles included in the three groups dealing with the puerperium (*C*), four were creditable and two excellent. Their analysis shows that practically none of the many problems connected with the normal aspects of this period had been considered, and that only two authors had dealt with the fascinating process of involution and then only from a clinical point of view. Furthermore, no one suggested that investigations during this period would probably eventually solve the riddle of the mode of production of retrodisplacements of the uterus and thus do away with one of the opprobria of gynecology.

Careful perusal of the twenty-five papers on puerperal infection indicates very accurately the general point of view of the society. With one exception, no serious contribution to the bacteriology of the affection has been made. The members have been more interested in discussing such questions as whether hysterectomy is the ideal treatment for desperate cases than in studying the mode of origin and the clinical course of the disease in the hope of preventing its outbreak and eventually securing its elimination.

In the four groups dealing with injuries to the birth-canal (*D*), there were three creditable but no excellent papers; little need be said concerning them.

In the seven groups dealing with the various obstetric operations (*E*) there were fifty-five papers, seven of which were good and two excellent. This is a startling disappointment, as it is in just this field that one would expect to find important contributions resulting from American mechanical ingenuity. On the contrary, the papers in this group were unusually poor; most of them consisted of reports of series of cases or of discussions concerning the indications for operation which were devoid of valuable suggestions. That this is not an exaggeration is shown by the fact that only a single paper among the twenty-five on cesarean section presented an idea which was not already well known; while in the articles concerning several other operations suggestions were occasionally made which were at variance with sound practice.

Passing over the two papers on abortion (*F*) we come to the largest group in our analysis, namely, fifty-one papers on extra-uterine pregnancy (*G*), in which there were seven good and five excellent communications. This represents a larger proportion of creditable papers than usual, but I do not think that we obstetricians can take much comfort from the fact, for on looking over the list of authors it is found that the great majority were pure gynecologists, who would feel aggrieved were they accused of having any particular knowledge of obstetrics. Here again most of the papers consisted of casuistic reports, or of discussions concerning the necessity for operation or of details of technic. Several articles were based on experimental work; but, with the exception of the reports on several specimens of ovarian pregnancy, no mention was made of histologic findings, of the interesting variations in placentation, or of many of the important problems connected with the etiology of the condition.

In the group dealing with the toxemias of pregnancy, eclampsia and vomiting (*H*), there were twenty-eight papers, of which three were creditable and two excellent. The same criticism holds good here as elsewhere, for with a few notable exceptions most of the writers were more concerned with the consideration of methods for evacuating the uterus than with the study of the factors responsible for the production of such a condition.

Passing on to the next group (*I*), one is surprised to find that during the course of thirty-eight years a body of obstetricians should have contributed only seven papers dealing specifically with contracted pelvis. On the other hand, this group of papers is unusually meritorious, as two were good and three were excellent. Of course, the subject was also considered incidentally in connection with the various operative procedures; but it seems strange, in view of its great practical importance and of our unsatisfactory methods of diagnosis and classification, that it has not evoked greater interest.

Considering together the three groups dealing with the various types of hemorrhage (*J*), there were twenty-three papers, of which one was creditable and one excellent. The great majority of these communications dealt with placenta praevia and more particularly with the determination of the most conservative method of effecting delivery in the presence of this complication. With but few exceptions, however, I was surprised to find that the experience of the writers on the subject was too limited to permit authoritative conclusions, and that many of the articles consisted in great part of literary references and didactic utterances. As usual, there was but scanty consideration of the mode of causation of the abnormality or of the anatomic peculiarities associated with it. Indeed, the only contribution to the subject was made in the early days of the society.

There were seven papers in the group treating of displacements of the uterus (*K*), the most important of which had to deal with dystocia following operations performed for the relief of retrodisplacements; one of them constituted a real contribution to the subject. In view of the fact that at least one quarter of all women develop retrodisplacements following the first confinement, it appears strange that more attention has not been paid to the etiologic significance of its appearance in the late puerperal period.

In the last two groups, covering the child and the communications on general obstetric topics (*L*), there were thirty papers, which I shall dismiss with the statement that four were creditable, while one constituted a distinct contribution.

Doubtless many of you may consider this analysis a harsh arraignment of the obstetric members of the society, but I feel sure that had it been seemly to mention names and to specify titles many would agree to it, though it is possible that a more lenient critic might have made the list of creditable and excellent papers longer. It is unnecessary for me to state that the analysis was not undertaken in a captious spirit, but was dictated by my interest in obstetrics and by my affection for this society, and in the hope that by laying bare our weak points I may possibly stimulate some of our members to better work.

If my estimate is correct that only twenty-seven of the 346 papers were excellent, the conclusion is inevitable that the American Gynecological Society has not done its part in the advancement of obstetric knowledge. If this is admitted — and I fail to see how any other conclusion can be reached — the query naturally arises whether the failure is to be attributed to the character of our membership or to some more deep-lying factor.

When we canvass the list of members, both past and present, and the important teaching and hospital posts held by them, and also recall the careful scrutiny to which they were subjected before being elected, it must be admitted that with few exceptions the society includes the foremost representatives of American obstetrics. This being the case, it follows that the lack of productiveness cannot be due to failings of the individual members, but should be attributed to some nation-wide cause the explanation of which must be sought in factors peculiar to American conditions.

As far as I have been able to ascertain, only three fundamental contributions to obstetrics have been made by American writers, namely, the introduction of the medicinal use of ergot, by John Stearns; the recognition of the infectious nature of puerperal fever, by Oliver Wendell Homes, and the development of laparo-elytrotomy, by T. Gaillard Thomas — the first a country practitioner, the second an anatomist and litterateur and the third a professor of obstetrics. On the other hand, with few exceptions American obstetricians have been content to appropriate and adopt the results of European investigators and to limit their writings practically to casuistic contributions and to the discussion of details of operative technic.

Opinions may differ as to the national peculiarities which are responsible for this relative sterility, but I feel very strongly that three main factors are involved, namely, (1) the tendency to regard the practice of medicine as an engrossing financial pursuit, (2) defective ideals and tendencies in medical education and (3) the divorce in this country of gynecology from obstetrics.

With few exceptions, all of us undertake the study of medicine as a means of making a livelihood, and consequently, our first aim is to obtain sufficient practical facility in our art to enable us to attain that end, and no one knows better than I what it means to do so and how insistent are the demands of practice. Of those who are exclusively engaged in private practice and who have not formed important hospital or teaching connections, little more can be expected than that they render their patients efficient service by keeping reasonably well abreast with the advance of knowledge and extend a sympathetic hearing to such of their colleagues as may try to add to it.

More, however, should be expected from those who have important hospital connections or who hold teaching posts. The former fail to do their duty to the hospital and its patients if they and their assistants do not attempt to extend the limits of knowledge; while the latter cannot expect to stimulate their students or to train their assistants properly unless they teach them how little is really known and can open vistas of what may be accomplished by patient scientific work. The standing of such men should be judged, not by the size of their income or by the local consideration in which they are held, but by whether they make an occasional contribution to the science which they profess to love, and, if they are content to publish mere casuistic reports or series of operations, they must be prepared to have others consider that they have wrapped their talent in a napkin and buried it.

To my mind, however, one of the most important factors in our lack of productivity is to be found in our system of medical education. Until very recently university ideals were entirely lacking in our medical schools, and even now, in many institutions affiliated with universities, the connection is purely nominal. How many of us who hold professorships can truthfully say that we are held to the same accountability as the heads of the "true" university departments, or are expected to justify our existence by an occasional contribution to science? Do not we, and the authorities as well, consider that our obligations have been satisfactorily fulfilled if we teach a few hours each week, give decent care to the patients under our charge and once or twice a year write a practical paper so that our professional friends may know that we are still alive? We must admit the indictment, but the fault is not entirely ours; for I think that not much more can be expected of us until the universities awake to the fact that medical education is a serious undertaking and is the most costly of all forms of instruction.

How many obstetric departments are provided with proper accommodations for a sufficient number of patients for the instruction of students, with adequately paid and enthusiastic assistants, or with suitably equipped laboratories for research work, not to mention a salary for the director in any way commensurate with the ability and effort necessary to supervise the work in anything like an ideal manner? Real university departments are just beginning to be organized in some other branches of medicine, but I know of none in gynecology or obstetrics.

From extensive investigation I know that, in most of our schools, obstetrics is the department most poorly equipped and must ordinarily be content with what is not wanted by others; often the professor is regarded by his colleagues as being engaged in an almost unworthy pursuit. No doubt some professors are poorly trained and fulfil their obligations lightly, but I know many who take them seriously and feel depressed whenever they consider the status of their department and their inability to do better work. So long as such conditions exist, it is scarcely conceivable that many professors will be scientifically productive or will often be able to induce promising young men to devote themselves seriously to this branch of medicine, for the few men in this country who are really performing their duty are doing so at a great personal sacrifice and against odds with which they should not have to contend.

The third reason for the low state of American obstetrics is that this is the only country in which obstetrics and gynecology are sharply divided, and I may add that this is the only important gynecologic society in which the majority of the members take no interest in obstetric problems, or in which a member discussing a paper would preface his remarks by stating that he knew nothing of obstetrics and then go on to make banal remarks.

Time will not permit me to discuss this phase of the subject at length, but I know that in this country neither gynecology nor obstetrics will take its proper place until a body of men has been developed who will be interested in and devote themselves to the study of the problems connected with the entire sexual life of women. I hope I may live to see the day when the term "obstetrician" will have disappeared and when all teachers, at least, will unite in fostering a broader gynecology, instead of being divided, as at present, into knife-loving gynecologists and equally narrow-minded obstetricians, who are frequently little more than trained man-midwives.

While it is debatable whether a union of gynecology and obstetrics is feasible for those engaged exclusively in private practice or would materially improve matters in most medical schools as at present organized, there is no doubt in my mind that the professorial chairs in the university medical schools need to be filled by broadly trained scientific men, who are prepared to give their time to their duties. Such a development, however, is scarcely to be expected until the universities are prepared to equip and maintain women's clinics, somewhat similar to the Frauenkliniks of Germany, but more liberally provided with laboratories for the anatomic, chemical, pathologic and physiologic investigation of gynecologic and obstetric problems. In this event the director must be an accomplished scientific man as well as a competent clinician, who will devote the major portion of his time to the management of his department. If he is of the proper type, this will involve no sacrifice; but if he is not, he will be unhappy, no matter how great the emoluments may be. Institutions of this character will also require the services of a large staff of well-trained and enthusiastic assistants, but will be able to make little use of the short-term intern, who desires only a smattering of learning. Large endowment or state aid will be necessary for the support of such institutions, but I can conceive of no better expenditure of funds if it leads to fuller knowledge of the many unsolved problems connected with women and to the development of a body of men competent to undertake their investigation.

I hope to see a number of such institutions scattered over the land and then no future president of this or any other society will be able to say that its members have not done their part in the advancement of obstetric or gynecologic knowledge. We have heard of "the passing of a specialty," but I feel that there is a glorious future for the broader gynecology, which is as yet scarcely in its infancy. Let us do what we can to advance it.

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Hygiene and School Instruction.—The text-books offer a splendid field for instruction, and the time is not far distant when those classics in school literature, "Ned, can you hop?" and "What is in the nest?" will give way to epigrammatic statements concerning the value of fresh air, the danger of the common drinking-cup and the roller towel, the importance of a pure water-supply, the relation between sewage and disease, the contributing influence of alcoholic indulgence in the development of tuberculosis, etc.—J. H. Landis, in *Am. Jour. Pub. Health.*

TYPHOID FEVER *

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Typhoid fever does not originate by itself, out of a clear sky. Everybody knows that it is possible to connect many typhoid cases with a previous case of the same disease. This would be true of every case if we could discover all the circumstances of infection.

Like all other infectious and contagious diseases, typhoid fever is a germ disease, that is, it is due to a small living organism. The typhoid germ does not develop by "spontaneous generation" out of lifeless matter, nor does it come into existence suddenly as the wayward offspring of an innocent microbe, but only as the descendant of another germ of the same kind. It is therefore true that if all typhoid germs now living could be destroyed, the disease itself would cease to plague us. Although immediate and complete extermination of all typhoid bacilli is an impossible task, it is evident that if we can in any way materially lessen their number, we shall also diminish the frequency with which infection occurs. One rattlesnake in a town is less dangerous than ten thousand rattlesnakes. In this sense typhoid fever is a preventable disease. If we can keep away from the typhoid bacillus or can keep it away from us, we shall not have typhoid fever. We cannot see the bacillus without a microscope, but fortunately we know where it lives and how we are likely to come into contact with it, so that we are able to do much to protect ourselves.

First of all we must remember that typhoid fever is a disease restricted to man. None of the domestic animals suffer from it. In consequence, methods of prevention are in some respects simpler than in the case of a disease which, like tuberculosis, afflicts animals associated with man as well as man himself.

EARLY RECOGNITION OF TYPHOID FEVER IMPORTANT

For purposes of prevention as well as cure it is important to recognize the existence of typhoid fever in an individual or in a community as early as possible. The symptoms of typhoid fever, like those of other infectious diseases, are not the same in all persons. Atypical cases are often encountered in epidemics. There are all grades of severity, from the extremely toxic and fatal cases to those in which the patient thinks he is suffering merely from a slight "indisposition" or "bilious attack," is able to keep about his work and perhaps never calls in a physician. Even in severe cases some one or more of the usual symptoms of typhoid fever, such as initial headache, rose-spots over the body, characteristic fever curve, or enlarged spleen may be lacking, or the disease may present an unusual and confusing symptomatology so that early diagnosis is uncertain or impossible. It is less than a hundred years since typhoid fever began to be distinguished by physicians from other "slow" or "continued" fevers, and there is still a measure of uncertainty in some cases in which physicians have to base their diagnosis on "symptoms" alone, and have not the aid which comes from the laboratory tests. Infection with the typhoid bacillus may be mistaken for malaria or for infections with other bacteria, such as the tubercle bacillus. From the point of view of prevention it is highly important that diagnosis of typhoid fever be made as early and as accurately as possible in order that suitable means shall be taken to prevent further dissemination of the typhoid bacilli from the sick person.

At present the physician can avail himself of two valuable diagnostic procedures in addition to a study of the symptoms. One of these is examination of the blood by means of cultures. The typhoid bacillus is present in the circulating blood early in the course of the disease, so that from 20 to 40 drops of blood, drawn from the ear or finger or, better, from a vein in the arm by means of a sterile syringe and subjected to expert bacterial cultivation and examination, will reveal the presence of the typhoid bacillus usually in the first week of the disease. If the blood is examined later than the first week or ten days, even in pronounced cases the bacilli may not be found. When the typhoid bacillus is actually obtained from the blood in this way there can be no further doubt as to the presence of typhoid fever. A certain degree of technical experience and suitable laboratory facilities are necessary for the proper application of this method.

The other method of bacterial diagnosis is the agglutination or Gruber-Widal test. This is based on the discovery that the blood of persons who are infected with the typhoid bacillus possesses the power of clumping or agglutinating the bacilli. For this test there is needed only a small amount of blood, which may be collected in small tubes, or allowed to dry on mica slips. When the serum from a drop of coagulated blood is mixed in dilution of 1:50 or, better, 1:100, with a culture of typhoid bacilli suspended in salt solution, the bacilli will gather in clumps if the blood is taken from a typhoid fever patient, but will remain separate if the blood comes from a normal person or from one affected with a disease which is not typhoid fever. This clumping property in the blood does not develop as a rule until the second week of the disease, and may not appear until later, or may be absent altogether in exceptional cases. It is so often positive, however, even in cases in which other symptoms are obscure, that it has proved a very valuable aid in typhoid diagnosis. The presence or absence of agglutinative power cannot be regarded as final, but taken along with the clinical symptoms and other circumstances it makes it possible for physicians to recognize the existence of typhoid infection in practically all cases. If the first agglutination test is negative, and the symptoms of typhoid persist, a second and even a third test should be made. In the interpretation of positive agglutination tests, careful inquiry should be made as to previous typhoid infection or previous typhoid vaccination, since in either of these instances a positive agglutination may be obtained although the disease from which the patient is suffering may be due to other infection. Moreover, either typhoid vaccination or a previous attack makes the subsequent occurrence of typhoid extremely unlikely.

The importance of recognizing as many cases of typhoid fever as possible and recognizing them early is very great. The typhoid germ multiplies almost exclusively in the living human body and cannot as

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a rule retain its vitality very long apart from its human host. The disease is kept alive, therefore, mainly by the transfer of the living germ from the person in whom it has grown, usually a typhoid patient, convalescent, or carrier, to a healthy person who gives it shelter, becomes a breeding-ground for it, and in his turn passes it on to one or to hundreds of others. It is one of the urgent tasks of public hygiene to break this chain of typhoid germs at as many points as possible.

REPORT TYPHOID CASES

To this end it is necessary to establish in each community or group of communities some central health office to which the physicians shall report every case or suspected case of typhoid fever coming under their observation. Only in this way can the beginnings of an epidemic be detected and measures taken to prevent further spread. One or two typhoid cases in the practice of a busy physician naturally do not appear to him especially significant, but if several physicians report cases occurring about the same time so that the total number in the town is suddenly increased to an unusual degree, the health authorities are at once made acquainted with the situation and can try to discover the source of the outbreak. Only in this way, too, is it possible to place each case of typhoid fever under the centralized supervision that it must have in order to lessen the chance of further scattering of disease germs throughout the town. Family and friends must be warned of the danger of close association with the patient. In some instances in which expert nursing cannot be provided, special precautions must be taken to insure the disinfection of the excreta. For all these reasons it is easy to see why prompt notification of every suspected case of typhoid fever is the first important step in preventing spread of the infection.

WHERE THE TYPHOID BACILLUS IS FOUND

While the typhoid bacillus makes its true home in the human body and does not thrive in water, soil or the bodies of the lower animals, it is nevertheless able to survive for a few hours or days after it leaves the body of its host. This fact explains why typhoid fever is sometimes caused by germs that have traveled many miles away from the person in whose body they originally grew. Typhoid bacilli are discharged from the body in (1) the feces, (2) the urine and rarely (3) the sputum. They may be present in these excretions in enormous numbers. A single drop of urine may contain as many as one million living typhoid germs. Clothing, bedding, table utensils, in fact any object used by, or coming into contact with, a typhoid patient may easily become contaminated with typhoid bacilli even when ordinary care is used. It has long been known that members of the family and especially those nursing typhoid patients are very liable to contract the disease. Any one can see why this is so. Merely swallowing the typhoid germ is sufficient to produce typhoid fever. The facts just stated show how difficult it is to avoid swallowing typhoid bacilli whenever persons must live for days or weeks in close association with a patient who may be discharging daily hundreds of millions of germs. Ordinary washing or rinsing of the hands does not render them bacteriologically sterile. The attendant of a typhoid patient, after going to the sick-room or handling anything from it, should wash the hands thoroughly with soap and water and, if possible, use also a disinfectant solution such as 1:2,000 mercuric chlorid, compound solution of cresol, or 70 per cent. alcohol. Towels, door-knobs, articles of furniture or clothing may be the means of conveying typhoid bacilli to the hands. The hands may in turn be used for breaking or handling bread, cake or other articles of food and so introduce typhoid bacilli into the mouth. Contact infection, or more appropriately hand infection, is one of the most common causes of typhoid fever, and close association with typhoid patients must always be looked on as dangerous. The danger can be reduced by removal of typhoid patients to the hospital. Unskilled home nursing, however painstaking and affectionate, will always imperil the household. This is particularly the case if the person caring for the patient also has to do with the preparation of food for other members of the family. Even in hospitals, experienced nurses and attendants are likely to contract the disease unless great care is taken. All nurses of typhoid patients and all persons living in houses in which typhoid patients are being cared for should be protected by the method of typhoid vaccination which will be described presently.

WATER-BORNE INFECTION

The direct handing over of typhoid germs from one person to another which has just been described is only one way in which the disease is transmitted. The mode of infection may be much more indirect and roundabout. Typhoid bacilli sometimes find their way into food or drink used by large numbers of persons and give rise to explosive and very extensive outbreaks. Public water-supplies and milk-supplies are two of the most common sources of typhoid infection. In many localities the connection between water-supply and sewerage systems is far too close. The enormous amount of water required for large cities in this country can seldom be obtained absolutely free from sewage contamination. When typhoid germs leave the body in the excreta they are likely to pass into the sewerage system.[1] It does not take a large quantity of sewage to produce infection. The discharges of a single patient, even when diluted with several million gallons of water, have been known to give rise to over one thousand cases of typhoid fever. This is not so remarkable as it seems if we remember that the number of typhoid bacilli discharged in one day may easily reach 5,000,000,000, or more than ten germs in every gallon of water in a large supply like that of Chicago.

Surface water-supplies such as rivers and lakes are especially liable to sewage contamination, and with the growth in density of population in this country such pollution seems likely to increase rather than diminish. Under present conditions all sewage must be regarded as possibly containing typhoid germs. In many localities it is not considered practicable to render sewage entirely free from intestinal bacteria before its discharge into large lakes or water-courses. Water-supply officials are hence right in advocating purification of all water-supplies not obtained from perfectly pure sources. Purification and consequent freedom from disease germs may be secured either by filtration on a large scale or on emergency by treatment with calcium hypochlorite (bleaching-powder). Even carefully protected water-supplies from thinly settled districts are liable to accidents. In Germany this is recognized to the extent of requiring the purification of all surface waters used for city supplies.

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[1] It might be supposed that if all the excretions from typhoid patients were sterilized the disease would cease to exist, and it is undoubtedly true that the prevalence of the disease would be greatly diminis[illegible] typhoid excreta were more generally [illegible] matter is not quite so simple. Besides [illegible] already mentioned which never come under the care of a physician, and the irregular cases which are not definitely recognized as typhoid, there are some convalescents who continue to discharge living and virulent typhoid bacilli from their intestines long after complete recovery has taken place. In addition there are certain patients, probably rather numerous, who have begun to discharge typhoid bacilli in the feces before typical symptoms have appeared and before they have submitted themselves to the care of a physician. Even with the great improvement that would come if the disinfection of the excreta of all known typhoid patients were strictly carried out, those persons in the groups just described would be sufficiently numerous to propagate the disease. All sewage must be regarded as infectious.

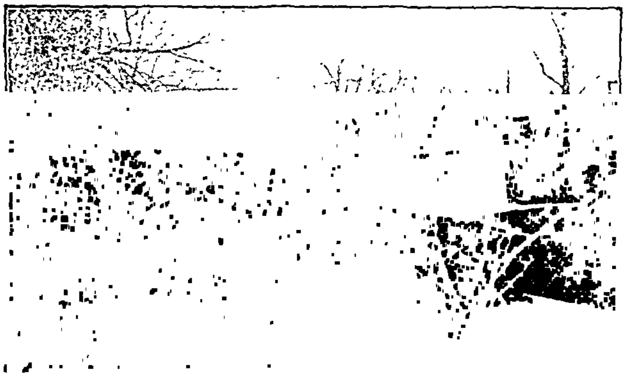

Fig. 1.—This reproduction of a photograph shows a privy overhanging a small brook, one of the feeders of the Merrimac River, Massachusetts, only 2½ miles above the intake of the Lowell water-works. The privy was used in October, 1890, by a patient in the beginning stages of typhoid fever. The use of this outhouse by the patient was followed by an outbreak of typhoid fever in Lowell, numbering several hundred cases. (From Sedgwick's Investigations of Recent Epidemics of Typhoid Fever in Massachusetts, 1892.)

In country districts, also, water may be a vehicle of typhoid infection. Wells so placed as to receive drainage from privies are a source of danger. In limestone regions the beautiful but treacherous "springs" need to be examined with special care, since the so-called springs are often only small surface streams and brooks which emerge at the surface after a longer or shorter flow through underground channels. If seen in the beginning as a brook the water would be recognized by every one as coming from dangerous localities, while as a "spring" it might be drunk without suspicion of its filthy origin.

Deliberate water-drinking is not the only way in which typhoid fever may be contracted from polluted water. It must be remembered that while bathing in polluted water, either salt or fresh, one may accidentally swallow small quantities of water, and this has been known in a number of instances to give rise to typhoid fever.

Measures to prevent the spread of typhoid fever by means of water-supply may be summed up as follows: Our first endeavor should be directed to preventing in every way possible the entrance of typhoid germs into sewers or into privy vaults. To this end, thorough disinfection of all discharges from the body of a recognized typhoid patient must be carried out.[2] In spite of all precautions some typhoid bacilli will get into the sewage,[1] and hence such sewage must be always regarded as probably infective. Sewage should be kept out of all water sources used as drinking water-supplies. All of the usual methods of treating sewage such as sedimentation, precipitation, filtration, and the like diminish the danger of water-borne typhoid fever even if they do not altogether remove it. A more effective barrier against typhoid bacilli in water is the purification of the water-supply itself by storage, filtration or treatment with bleaching powder. Finally, if municipal methods are inadequate and there is reason to fear that typhoid bacilli sometimes get into the water-mains, security against water-borne infection may be obtained in the household by boiling the water for five minutes.

In the country the purity of the drinking-water rests largely in the control of each family. Shallow wells should be protected against surface wash and should be so located that the contents of privy vaults and outhouses can by no possibility leak through the soil into the well-water. Deep driven wells protected from surface contamination constitute a particularly safe source of supply.

MILK-BORNE INFECTION

Milk, like water, can be the means of introducing typhoid bacilli into the body. Several hundred well-marked epidemics of typhoid fever are on record which have been traced to milk containing typhoid germs. The bacilli may get into the milk in various ways. When a person suffering from a mild or unrecognized case of the disease is engaged in the collection or distribution of milk, or when flies have access to the contents of a privy vault in which typhoid bacilli happen to be present and at the same time have access to the milk-house, or when milk-cans or bottles are rinsed in impure water just before filling, or are not sterilized after removal from a house in which typhoid fever prevails, the possibilities of infection are clear enough. Unlike water, milk may serve as a medium for the multiplication of typhoid bacilli so that a small amount of infected milk mixed with other milk at a creamery may lead to the distribution of many more bacilli than were originally present. Such multiplication probably goes on for only a limited period while the milk is still quite fresh. The danger of infection from buttermilk or from butter made from sour cream is much less than

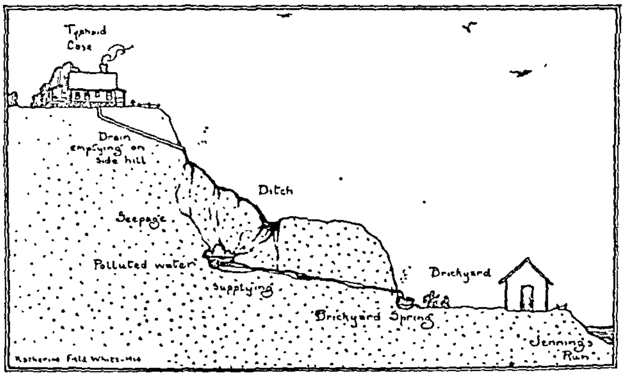

Fig. 2.—The spring at the brickyard furnished an abundant supply of clear water "of pleasant taste and appearance and agreeable coolness." Following the development of a typhoid case in the cottage on the hill, 108 of the 200 workmen in the brickyard became ill with typhoid fever. (Adapted from a study of an epidemic in 1906 at Mount Savage, Md., by Stokes and Price, Maryland Med. Jour., December, 1906.)

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[2] Typhoid stools may be disinfected by adding enough hot water to cover the stools in the receptacle together with about a cupful of commercial unslaked lime (quicklime). The lime should be in lumps, broken up in small pieces and distributed over the stool. The mixture should stand for two hours. Chlorinated lime (¼ pound in 1 gallon of water) solution can also be used.

from fresh milk. Protection against milk-borne typhoid may be easily secured by boiling or pasteurizing all milk not known to be safe. Typhoid bacilli are killed by exposure for ten minutes to a temperature of 60 C. (140 F.), so that efficient pasteurization constitutes an excellent safeguard. It is plain also that milk should not be distributed from farms on which typhoid fever exists, and that on all dairy farms human excreta should be regarded as highly dangerous and should be disposed of with particular care.[3]

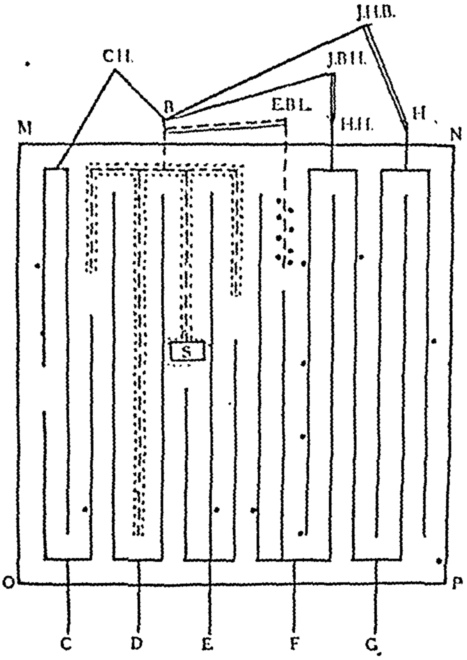

Fig. 3.—Stamford typhoid fever epidemic, April 15 to May 28, 1895 (Herbert Smith: Connecticut State Board of Health Report, 1895, p. 161). Stamford had a population of 15,000. The large square *M N O P* represents the town of Stamford. *B* is the dairy distributing the implicated milk, and the dash-lines running from *B* into the city represent the milk-route of the dairy. Each of the dots represents one case of typhoid fever, and is placed on the route of the dairy from which it was supplied with milk. There are 368 such cases on *B's* route, including the 12 around the *S*, which is meant to represent the café supplied by *B*. *B* supplied about one-eleventh of the milk used in the town. *HH* and *H* are distributing dairies similar to *B*. *CH* and *EBL* are producing farms selling milk to *B* and also peddling some themselves. The dash-line extending from *EBL* represents his personal route of 5 houses in which 8 cases of typhoid occurred. *JHB* and *JBH* are producing farms selling milk to *B* and also to distributing dairies *H* and *HH*. The double lines show the dairy to which the producer sold most of his milk. Dash lines show the apparent course of the infective agent. *C, D, E, F,* and *G* are other dairies having routes in Stamford.

TYPHOID FROM OTHER RAW FOODS

Besides milk some other articles of food seem particularly exposed to possibilities of typhoid contamination. Oysters and other shell-fish that have grown in sewage-contaminated waters or that have been placed to "fatten" by "floating" or "drinking" near the mouths of sewage-polluted creeks have been shown to harbor the typhoid bacillus, and when eaten raw to produce more or less extensive typhoid outbreaks. Thorough cooking of shell-fish does away altogether with the possibility of infection through this source. In the United States, inspection and control of oyster beds by state and national health authorities have greatly reduced the possibilities of danger from the use of raw oysters. Certain vegetables or berries commonly eaten uncooked may become contaminated with typhoid bacilli if night-soil is used as a fertilizer on truck gardens, or if raw sewage is used for irrigation. The use of human excreta as fertilizer for certain crops, such as celery, lettuce, or strawberries, is most undesirable. In a few instances definite outbreaks of typhoid fever have been shown to be due to the use of raw vegetables or fruits. The difficulties in the way of tracing infection to the use of such articles are plainly very great, and many investigators are of the opinion that a larger amount of typhoid fever is due to the use of contaminated raw foods than can at present be actually proved.

FLY-BORNE INFECTION

Under conditions in which human excreta are exposed to the visits of house-flies, the possibility of spreading infection through the agency of these insects is well recognized. Back and forth from privy vault to eating-table wander these bearers of infection. At the time of the Spanish-American War when lime was used in the camp latrines, flies with their legs whitened with lime were afterward seen walking over the food on the mess-tables. Conditions favoring fly-borne typhoid fever are especially favorable on the farm as well as in military encampments, lumber or construction camps, and the like. Reduction in the number of the flies, which can be effected especially by elimination of their breeding-places, of which horse-manure is one of the most common, together with proper disposal of excretal refuse, will greatly diminish if not altogether remove danger from this source. A room or hospital ward containing typhoid patients should be carefully screened in fly-time. It must be remembered that the fly can act only as the mechanical carrier of typhoid bacilli. However disgusting and annoying the fly's habits may be, if it does not have access to material in which typhoid bacilli are present, it cannot convey typhoid fever.

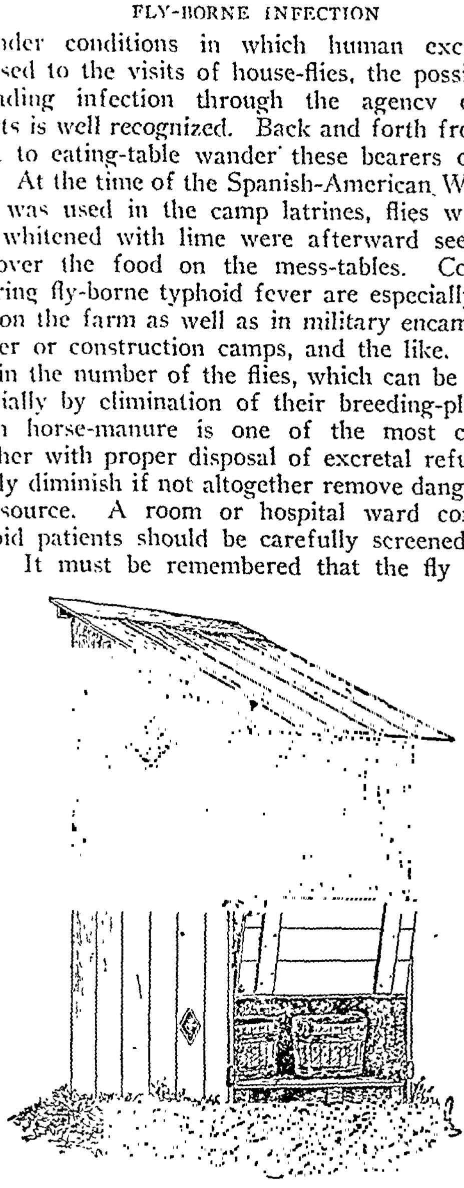

Fig. 4.—This sanitary privy with raised back is fly-tight and is so arranged that the buckets or tubs within do not touch the ground. (From the Virginia Health Bulletin, June, 1911.)

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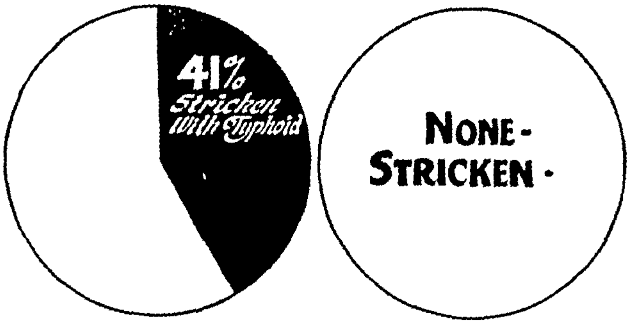
[3] A simple and inexpensive sanitary privy adapted for use on the American farm is described in a bulletin of the United States Department of Agriculture. This bulletin (Farmers' Bulletin 463), may be obtained free of cost from the State Board of Health or from the Department of Agriculture, Washington, D. C. It gives full working directions for the construction of the sanitary privy.

There is no evidence that typhoid fever is ordinarily air-borne. Under unusual conditions it is possible that dried excreta might be blown about as "dust" and that typhoid bacilli might then come to settle on food or possibly even be inhaled and swallowed, but this mode of infection is probably very rare. The immediate neighborhood of a typhoid patient is dangerous not because there are any typhoid bacilli floating in the air, but because of the likelihood that objects in the room—pillows, arms of chairs, doorknobs—have been accidentally contaminated in the care of the patient.

TYPHOID CARRIERS

The fact has already been mentioned that well-defined and active cases of typhoid fever are not the only ones that may be discharging typhoid bacilli. The importance of healthy typhoid carriers needs to be still further emphasized here. Recent investigations have shown that from 4 to 6 per cent. of all persons recovering from typhoid fever continue to discharge typhoid bacilli in the feces or urine or both for months and even years after complete recovery. Occasionally, also, a person who has never had a recognized case of typhoid is found to be a carrier. Plainly, such persons are likely to be starting-points of fresh infections, especially if, as in the famous case of the New York cook, "Typhoid Mary," their occupation is concerned with the handling or preparation of food. "Typhoid Mary" was the cause of twenty-six cases of typhoid among the members of seven different families for whom she worked.



Jacksonville, Fla., 1898; Seventh Army Corps, U. S. Army; 10,759 men, none given typhoid vaccine.

U. S. Army, San Antonio, Tex., 12,801 men, all given typhoid vaccine.

Fig. 5.—Results of typhoid inoculation. (From Washington State Board of Health Bulletin, May, 1912.)

An undetected carrier on a dairy farm may be the cause of an explosive outbreak, or of scattered cases along the milk-route during a considerable period. No satisfactory means have yet been found for permanently ridding these typhoid carriers of the germs that they harbor. Carriers, when found, must be warned of the possible havoc they may scatter among relatives and friends, and so far as possible should be prevented from engaging in occupations which involve a maximum hazard to the community. Since the number and identity of such carriers in a community are at present not readily ascertainable, all sewage and the contents of all privy vaults must be looked on as possibly infectious. The chance use by a visiting typhoid carrier of an improperly constructed outhouse in a small country town or on a dairy farm may be the starting-point of a serious outbreak whose origin will always be "mysterious." While the problem of dealing with typhoid carriers is very difficult, it cannot be forgotten that the outlook in general is a very hopeful one. Any diminution in the number of water-borne or milk-borne epidemics will avoid the production of new carriers. The improvement is bound to be progressive. Every reduction in the amount of typhoid fever automatically lessens the number of carriers.

It can be seen from the foregoing that improper disposal of excretal refuse is at the bottom of most typhoid fever infection. Particularly is this so in country districts, where fly-borne infection is most likely to take place, and where the bulk of milk infection, from which city dwellers later have to suffer, also occurs.

TYPHOID VACCINATION

It has been found that injection of killed and harmless typhoid bacilli will protect against typhoid infection even in persons particularly exposed by their occupation or other social conditions. In the United States Army, in which typhoid vaccination has been compulsory since September, 1911, the disease has practically disappeared. In 1909 there were 173 cases and 16 deaths in a force of about 69,000 men; in 1912, only 27 cases and 4 deaths in about 83,000. From August, 1912, to August, 1913, there were only 2 cases. Many of these troops were engaged in maneuvers in Texas (1911-1912) and were associated more or less intimately with the civil population, among whom typhoid cases were occurring in considerable numbers. Owing to the conditions under which soldiers must live in the field or on the march, the likelihood of typhoid fever is great. In 1898 at the time of the Spanish-American War, 4,422 cases of typhoid and 248 deaths occurred in a division of 10,759 men; among 12,801 vaccinated men under very similar conditions at San Antonio, Tex., in 1911, only one case developed.

Similar results have been obtained in hospitals in which typhoid patients are cared for and in which in the past many cases have developed among the nurses. In one large hospital inoculation of the nurses was followed by a year of entire freedom from the disease among nurses and attendants for the first time in the history of the institution. The lesson is plain. All persons whose occupation tends to expose them to typhoid infection should be vaccinated. Nurses, physicians, soldiers and all those whose manner of life leads to frequent travel and to eating in a variety of restaurants, hotels, or to drinking of water of unknown source come under this head.

What is commonly known as "vacation typhoid" is chiefly the typhoid picked up by contact with infection during travel. In a word, the larger the number of places to which one resorts for food and drink the greater is the chance of crossing the trail of a typhoid carrier. Vaccination gives a high degree of protection for three years, perhaps for a longer period. For those who are not directly exposed to known typhoid infection, but who realize the possibilities of infection through intercourse of urban life, typhoid vaccination, which has been clearly shown to be both safe and efficient, offers an attractive and cheap form of insurance against typhoid fever.

RULES FOR PREVENTING TYPHOID FEVER

For the Individual:

1. Keep away from all known or suspected cases of typhoid.

2. Wash hands thoroughly before meals. Do not use "roller towels."
3. Use drinking-water only from sources known to be pure, or if this is not possible, use water that has been purified by municipal filtration or by hypochlorite treatment or by boiling in the household.
4. Avoid bathing in polluted water.
5. Use pasteurized or boiled, instead of raw, milk.
6. Select and clean vegetables and berries, that are to be eaten raw, with the greatest care.
7. Avoid eating "fat" raw oysters and, in general, oysters and other shell-fish whose origin is not known.
8. Be vaccinated against typhoid in all cases in which any special exposure is known or feared.

For the Community:

1. Insist on the hearty cooperation of all persons with an efficient health officer.
2. Require notification and a reasonable degree of isolation of every known or suspected typhoid case.
3. Exercise strict control over the disinfection of known typhoid excreta.
4. Insist on pure or purified water-supplies.
5. Require pasteurization of milk-supplies.
6. Regard all human excreta as possibly dangerous, and control their disposition in such a way as to prevent contamination of food or drink.

THE PREVENTION OF SURGICAL SHOCK AND POSTOPERATIVE PAIN *

A. B. COOKE, M.D.
LOS ANGELES

Differ as we may as to the real nature of surgical shock, the exact factors concerned in its production and the various intricate physiologic and biologic problems involved, no one will deny that it constitutes the greatest danger of modern surgery. Certainly no more important subject can engage our thought and effort than to prevent it, or at least to minimize it, as far as possible, in every case. It is equally true that the prevention and minimizing of postoperative pain are questions which command the unfailing interest of every physician who is imbued with the true spirit of his calling. Various theories have from time to time been advanced as to the cause of shock, each one containing an element of truth, but no one of them containing the whole truth. Generally operators of large experience tend to regard surgery as merely routine daily work and to give their attention rather to the pathology involved and the mechanical execution of a predetermined procedure, than to the philosophic and the humanitarian considerations relating to the subjects on whom their skill is expended. When one stops to consider the disproportionate importance which comes to be attached to the operation itself, there is little wonder that such divergent theories are held. True, surgical shock is frequently encountered, but only an occasional patient succumbs to it. True, postoperative pain is a distressing sequel in practically every case, but pain does not kill and the patient ultimately forgets. In the satisfaction of having performed a brilliant and mechanically perfect operation, the busy surgeon is apt to regard shock and pain as minor considerations and complacently to felicitate himself and his patient on the final happy outcome. They are *not* minor considerations. To the patient at least, a surgical operation is always a formidable ordeal and he has the right to demand that he shall be safeguarded in every way possible from both danger and pain. Surgery does not fulfil its highest mission unless the welfare of the patient is at all times recognized as paramount to operative technic, though to keep it so requires a little extra time and a little additional trouble on the part of the surgeon, as well as some increase in the incidental expense.

It is the consensus of opinion to-day among both clinicians and laboratory workers that the loss of vasomotor control resulting in the reduction of the blood-pressure below safe limits is the chief factor in the production of shock. The question before us, then, is: How may a surgical operation be conducted so as to cause the least possible disturbance of the vasomotor function? I am convinced that the method of anoci-association, as worked out by Crile, offers the best means yet devised to accomplish this end. At the same time it possesses the distinct additional advantage of protecting the patient against postoperative pain.

It seems almost superfluous to say that Dr. Crile fully recognizes the importance of complete hemostasis and of expedition in operating. Being a most painstaking and notably dextrous operator himself, he regards these as elementary surgical principles. He does not hold, however, that five or ten minutes' additional time properly utilized in the average operation is criminal practice. Haste means roughness of manipulation and he emphasizes gentleness as a primary requisite to the successful employment of the method which he advocates.

THE PRINCIPLES OF ANOCI-ASSOCIATION

The four cardinal principles of anoci-association are:

1. The preliminary administration of a hypodermic of morphin and scopolamin.
2. The use of nitrous oxid and oxygen for general anesthesia.
3. The complete blocking off of the operative area by the infiltration of a solution of novocain.
4. The infiltration of all tissues traumatized which are supplied with sensory end-organs (except the skin) with a solution of quinin and urea hydrochlorid.

To these I would add a fifth, referring especially to the prevention of gas pains following abdominal operations, namely, early opening of the bowels.

1. The preliminary hypodermic of morphin and scopolamin is designed to allay apprehension and tranquillize the patient. In certain cases the psychic factor is quite as important as the physical. In all cases the preoperative management calls for far more care and attention than it usually receives. An attitude of calm decision and confidence on the part of the surgeon and of cheerful sympathy and encouragement on the part of the nurse do much to rob the coming ordeal of its terrors. The hypodermic consisting of morphin sulphate 1/6 grain and scopolamin 1/150 grain should be administered an hour and a half in advance of the operation and repeated an hour later in half the dosage, if the desired effects, that is, sleepiness and relaxation, are not obtained. Complete quiet in and about the operating-room should always be insisted on, at least until the patient is anesthetized.

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* Read before the Los Angeles County Medical Society, April 2, 1914.

2. It is universally conceded that, in competent hands, nitrous oxid is preferable to ether for general anesthesia, even in face of the fact that it possesses certain inherent disadvantages. Ether is irritating and malodorous, and by the resistance it arouses in the primary stage (so-called stage of excitement) favors the development of shock. It immediately and definitely impairs the defensive powers of the patient. It lowers the blood-pressure much (two and a half times) more quickly and decidedly than nitrous oxid. The changes in the brain-cells are three times more marked under ether than under nitrous oxid, because oxidation is retarded by the latter anesthetic. Ether increases the coagulation time of the blood. It is a powerful solvent of the body lipoids, kidney, liver and other viscera, as well as the brain, and in consequence there is always a large increase in the amount of waste products to be eliminated thereby favoring the development of nephritis, pneumonia and other postoperative complications. The nausea and vomiting incident to ether anesthesia are both distressing and dangerous.

Nitrous oxid is not unpleasant to take; it induces anesthesia almost at once, and the effect passes off as quickly as it is produced. Properly combined with oxygen and administered by a skilled anesthetist, it is now regarded as safe as ether, even for prolonged operations — far safer when the possible and not uncommon sequelae of ether anesthesia are taken into account. The anesthesia produced by nitrous oxid is not so deep and death-like as that produced by ether; but this is rather an advantage, since it necessitates thoroughness in the technic of the accompanying local anesthesia and demands gentleness of manipulation at every step of the operation.

The disadvantages of nitrous oxid are physical and financial rather than clinical. The apparatus required is cumbersome and costly and the gas itself is expensive. But these are negligible items when compared with the positive benefits it offers; and neither the surgeon nor the hospital is justified in declining to provide anything and everything which will make for the safety and comfort of the patient.

3. The combination of local with general anesthesia may be termed the crucial feature of anoci-association. It is based on the hypothesis that, however profoundly the patient may be under the influence of an inhalation anesthetic, the brain-centers are still capable of receiving impressions from peripheral stimuli and the brain-cells still capable of liberating impulses in response, otherwise the patient would be dead instead of merely unconscious. The only way by which this connection may be broken is by blocking off the area to be traumatized with a quickly acting, non-toxic local anesthetic. Novocain in 0.25 per cent. solution is the agent employed. First the skin in the line of the proposed incision is carefully infiltrated and then the subjacent tissues step by step as they are encountered. The application of pressure renders the anesthetic effect practically instantaneous. When the abdominal cavity is to be opened the peritoneum should first be thoroughly infiltrated in the line of the incision and the edges everted and blocked off for an inch on either side to protect it in the further manipulations. Complete relaxation is the gauge of thoroughness. If the technic is properly carried out, an incision in the upper abdomen may be approximated and closed with as great facility as one in the lower abdomen.

The benefits of the local anesthesia may and should be extended to the internal organs whenever indicated. Many viscera are unprovided with sensory nerve terminals and, if handled gently, may be operated on with impunity without the use of the local anesthetic. For instance, it is entirely possible in the absence of undue traction to perform the visceral suturing in a gastro-enterostomy without the least disturbance, even when the general anesthetic is suspended. On the other hand, certain of the internal organs, notably those of the pelvic cavity, have an abundant sensory nerve-supply and should be as carefully blocked off before proceeding with the operation as was the region of the initial incision. In a hysterectomy, for example, infiltration of the round ligaments and of the tubes and broad ligaments at the points to be sectioned should first be carefully made and then extended to the peritoneal folds in front of and behind the uterus as these structures become accessible. The appendix may be blocked off by infiltrating the meso-appendix and likewise the base of the gall-bladder and other areas as indicated.

4. The anesthetic effect of quinin and urea hydrochlorid is maintained for from forty-eight to seventy-two hours; that of novocain is quite transient. This in brief is the explanation of the fourth principle of anoci-association. Before closing the wound all stumps containing sensory nerves are infiltrated with a 0.25 to 0.5 per cent. solution of the quinin salt and the several tissues of the wound itself similarly treated as was the case with the novocain solution in making the incision. By this means the parts are held anesthetic until the process of repair is established and the patient escapes much of the customary postoperative discomfort.

Objection to the use of this agent is sometimes made, doubtless will be on this occasion, on the ground that it is dangerous, that it often causes necrosis, etc. In the light of my personal experience I can only say that such dangers are purely imaginary. If the solution is used in proper strength and the technic of its employment is correct in every detail, there is no ground for apprehension. Of course it must be recognized that the salt is a chemical irritant, and the man who injects a 4 per cent. solution into the skin and subcutaneous tissues is likely to meet with disaster. The slight edema sometimes noticed in the wound area after the use of the weaker solution is of no consequence and in no case coming under my observation has it seemed in any way to interfere with the healing.

It will be recognized at once that the successful employment of the novocain and quinin and urea hydrochlorid solutions requires a dexterity and a familiarity with the technic of local anesthesia which is not acquired without considerable experience. The degree of local anesthesia demanded in this technic is as complete and perfect as though no other means were used. No man not accustomed to operating under local anesthesia can expect to make a brilliant success of his first case, nor indeed of his first half dozen cases. On this point Bloodgood[1] remarks:

> It is important, in the first place, to emphasize here that success depends most perhaps on the technic of local infiltration. No surgeon who has not performed many operations under local anesthesia only, will be able to get the same results from the combined method. When the patient is awake and you attempt an operation under local anesthesia, you will always be informed when a painful act takes place and you

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[1] Studies in Blood-Pressure, Ann. Surg., December, 1913.

will be surprised at the difficulty of making such an operation perfectly painless. Very few surgeons in this country have educated themselves in the difficult technic of local infiltration. They are not familiar with the sensitiveness of the different tissues and the varying degrees of discomfort following different manipulations. It is my opinion that the first step in the development of this new technic is to perform as many operations as possible under local anesthesia.

With reference to the securing of early bowel-movements as a means of preventing gas-pains in abdominal surgery, which I have presumed to suggest as a fifth important step in the technic of anoci-association, let me say that my own experience has borne out the wisdom and beneficence of this plan in a long series of cases. Before adopting Crile's technic it had been my custom for a number of years to start the process of alimentary elimination on the second day following all abdominal operations unless some positive contra-indication existed. And I have never had cause to regret such a course. If one has confidence in the thoroughness of his work, including the security of his wound closure, I cannot understand what he expects to gain by confining the bowels for four, five or six days while the nausea and auto-intoxication continue and the suffering from gas-pains becomes constantly more severe.

It has been my regular plan to begin the administration of calomel in powder form, usually combined with cerium oxalate, twenty-four to thirty-six hours following the operation, giving a half grain of the former and one grain of the latter at a dose every hour until six doses are taken. Four to six hours after the last dose, or sooner if indicated, a purgative enema is given which generally inaugurates active peristalsis; if not, this is repeated at intervals until the desired effect is produced. It is seldom necessary to administer salts or castor oil when this plan is followed, and the combination of calomel and cerium oxalate, as a rule, acts most happily in allaying postoperative nausea. The few days or even hours of discomfort saved the patient without the addition of any appreciable element of risk seem to me not only fully to justify this routine, but also to render it highly desirable from every point of view.

VALUE OF THE METHOD

After stating that for more than three years he had employed the anoci-association technic in every operation, Bloodgood announces his deliberate conclusion as to the value of the method in these convincing words:

> From my observation I am convinced that any operation performed under this method of anesthesia, properly carried out, will result in less shock; the mortality will be lower; the postoperative discomforts and complications will be greatly reduced; the period of disability very much shortened. All this has certainly been accomplished in my own experience, and I think I have convinced my associates, both surgeons and nurses, that the method has great advantages over ether. I am also confident that no operating surgeon will come to the same conclusions until he has faithfully given this method a fair trial over a considerable period of time.

My own convictions on the subject could not have been better expressed. I am sure that the use which I have made of the method has rendered possible the best and most satisfactory work of my surgical experience. In the five months immediately preceding my removal to California, Dr. J. A. Gaines of Nashville, and myself, working together, employed it in about one hundred and twenty-five major operations covering virtually the whole field of surgery. Since coming to Los Angeles last fall I have had the opportunity, for quite obvious reasons, of applying the method in only about thirty cases including cholecystostomy, appendectomy, herniotomy (five), gastro-enterostomy (two), hysterectomy and various operations on the adnexa. In this series, the nitrous oxid has not been uniformly available; but even with ether as the inhalation anesthetic the advantages of this technic have been evident to both the physicians and the nurses who have seen and followed the work. To mention a single example: A gastro-enterostomy for duodenal ulcer was performed on a frail woman of 52. She had no shock, received no opiate or sedative at any time, suffered absolutely no pain and did not even know where the incision had been made until it was shown her on the ninth day. She was sitting up in bed on the fourth day, sitting in a chair on the seventh day and left the hospital on the twelfth day.

Contrasting the mortality rates at Lakeside Hospital before and after the introduction of the anoci technic, Crile shows that for the year 1908, the year preceding its introduction, it was 4.2 per cent.; for the year 1912 operations were performed on 2,672 patients, including all kinds of acute emergency cases, with a mortality rate of 1.9 per cent. In the last thousand operations previous to the time of the preceding report the mortality rate was 0.8 per cent.

Here I submit the question: whatever views one may hold as to the theories on which anoci-association is based, there would seem to be no just ground for doubting or discrediting the practical benefits its application yields. The ethical questions involved I shall not discuss. They are sufficiently apparent and each individual must face and solve them for himself.

In conclusion, I trust I may not appear dogmatic when I say that what a man's judgment approves and his experience confirms, that he knows. If there were no other data than those which my own personal work affords, I should still feel warranted in saying that, in my opinion, anoci-association constitutes the most important contribution to the progress of surgery in the past quarter of a century.

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RESULTS FROM THE USE OF LIVING LACTIC ACID BACILLI ON DIPHTHERITIC THROATS IN TWO GROUPS OF CASES

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AND
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The apparent lack of clinical benefit and subsequent failure to lessen the time of housing in the contagious ward of the City and County Hospital, with the use of living cultures of lactic acid bacilli, led us to abandon further tests in November and December, 1913.

In the fifteen or eighteen cases taken at random in which the lactic acid bacilli were used, there was no appreciable difference in the average time of quarantine from the throats treated in the ordinary manner with mild antiseptic gargles and various local applications.

The recent reports of favorable results have stimulated us to make another and a more detailed attempt, using both the living cultures of lactic acid bacilli and naturally soured milk, in each instance obtaining a control case so far as possible alike.

Mulford's (Bulgarian Type) cultures of living bacilli were used, after testing their activity by obtaining growths on agar-slants. Nose and throat were sprayed two, three and four times daily. No antiseptics were employed and individual atomizers were maintained. The patients receiving the naturally soured milk used this as a gargle and as a nasal douche four and five times daily.

The following six cases with their controls were taken at random from a group of twelve:

Case 1.—*Patient* (No. 66924).—Man, aged 27, admitted March 7, 1914, after being sick two days. On admission, temperature 102.6, pulse 112. Distinct membrane over both tonsils and posterior pharynx, with marked edema of uvula. Antitoxin, total, 20,000 units: 5,000 units before admission, 5,000, 5,000, 5,000 after. Lactic acid suspension spray every day at 10 a. m. and 2, 6 and 10 p. m. Cultures: March 9, 10, 12, 14 and 16, positive; 17, negative; 18, throat positive, nose negative; 20, throat negative; 21, throat and nose negative. Total days in hospital, 14.

Control (Patient 66892).—Boy, aged 11, admitted March 5, 1914, after being sick three days. On admission, temperature 100, pulse 130. Distinct membrane over greatly hypertrophied tonsils and pharynx, and marked edema throughout this membrane, being more extensive than in the foregoing case. Antitoxin, total 25,000 units: 10,000, 10,000, 5,000 all after admission. Locally, Seiler's solution as a gargle four times a day. Cultures: March 10 and 13, positive; 14, throat negative; 15, throat and nose negative. Total days in hospital, 11.

Case 2.—*Patient* (No. 67013).—Nurse, aged 26, admitted March 11, 1914, after being sick two days. On admission, temperature 103, pulse 115. Distinct membrane on right tonsil and pharynx. Antitoxin, total, 13,000 units: 5,000 units before admission, 5,000, 3,000 after. Lactic acid spray, nose and throat, 10 a. m. and 2 and 6 p. m. Cultures: March 14, 16, 21 and 26, positive; 29, negative; 30, throat and nose negative. Total days in hospital, 20.

Control (Patient 66952).—Nurse, aged 23, admitted March 8, 1914, after being sick two days. On admission, temperature 100, pulse 100. Membrane as above. Antitoxin, total, 30,000 units. No sprays. Cultures: March 10, 13 and 15, positive; 16, negative; 17, throat and nose negative. Total days in hospital, 11.

Case 3.—*Patient* (No. 66587).—Nurse, aged 27, admitted Feb. 18, 1914, after being sick two days. On admission, temperature 100, pulse 92. Distinct membrane over entire right hypertrophied tonsil and posterior pharynx. Antitoxin, total, 25,000 units: 8,000, 5,000, 8,000, 4,000. Lactic-acid spray, 10 a. m. and 2 and 6 p. m. Cultures: February 18, 20, 22, 25 and 27, and March 3, 5, 6, 8 and 10, positive; 11, negative; 12, throat and nose negative. Total days at hospital, 23.

Control (Patient 66699).—Nurse, aged 23, admitted Feb. 23, 1914, after being sick two days. On admission, temperature 100, pulse 120. Distinct membrane over both tonsils, most extensive over right, dirty gray in appearance. Antitoxin, total, 10,000 units. Locally, Seiler's solution as a gargle four times a day. Cultures positive up to March 9, except one negative, March 5; following this, March 12, 15, 18, 21, 24, 27 and 30, and April 2, positive; 4, negative; 5, throat and nose negative. Total days at hospital, 42.

Case 4.—*Patient* (No. 66830).—Boy, aged 16, admitted March 1, 1914, after being sick three days. On admission, temperature 98.6, pulse 120. Distinct membrane over both tonsils. Antitoxin, total, 9,000 units: 3,000 before, 3,000, 3,000 after. Lactic-acid spray, nose and throat, three times a day. Spray discontinued March 19. Cultures: March 1, 10, 11, 12, 13. 15. 16 and 18, positive; 20, negative; 21, throat and nose positive; 22, negative; 23, throat negative, nose positive; 24, positive; 27, negative; 28, throat negative, nose positive; 30, negative; 31, throat and nose negative. Total days in hospital, 31.

Control (Patient 66824).—Nurse, aged 24, admitted Feb. 28, 1914, after being sick two days. On admission, temperature 101, pulse 115. Distinct membrane over both tonsils, extensive with more edema. Antitoxin, total, 11,000 units: 3,000, 2,000, 3,000, 3,000. Locally, Seiler's solution as a gargle four times a day. Cultures: February 28 and March 8, positive; 10, negative; 11, throat and nose negative. Total days at hospital, 12.

Case 5.—*Patient* (No. 66497).—Nurse, aged 25, admitted Feb. 13, 1914, after being sick two days. On admission, temperature 102, pulse 110. Dense membrane over both tonsils and pharynx. Antitoxin, total, 5,000 units, single injection. Sour-milk gargle and nasal douche four times a day. Cultures: February 13, 22, 24, 25, 26 and 27, positive; 28, negative; March 29, throat and nose negative. Total days at hospital, 17.

Control (Patient 66553).—Boy, aged 7, admitted Feb. 16, 1914, after being sick two days. On admission, temperature 100, pulse 102. Distinct membrane over both tonsils and pharynx. Antitoxin, total, 5,000 units, single injection. Locally, Seiler's solution as a gargle four times a day. Cultures: February 16, 19 and 22, positive; 24, negative; 25, throat and nose negative. Total days at hospital, 10.

Case 6.—*Patient* (No. 66776).—Nurse, adult woman, admitted Feb. 24, 1914, after being sick one day. On admission, temperature 101, rising to 102.8 at 8 p. m.; 99.8 February 26, and normal, February 28. Distinct membrane over both tonsils. Antitoxin, total, 5,000 units, single injection. Sour-milk gargle and nasal douche four times a day, continued until March 12. Cultures: February 25 and March 5, positive; 6, negative; 8, throat and nose positive; 10, positive; 11, negative; 12, throat and nose negative. Total days at hospital, 15.

Control (Patient 66770).—Man, aged 20, admitted Feb. 25, 1914, after being sick one day. On admission, temperature 101, pulse 96. Distinct membrane over both tonsils. Antitoxin, total, 3,000 units, single injection. Locally, Seiler's solution as a gargle four times a day. Cultures: February 25, positive; March 4, negative; 5, throat and nose negative. Total days at hospital, 9.

CONCLUSIONS

The average quarantine period of the six cases reported in which the lactic acid bacillus was used is twenty days.

The average quarantine period of the six controlled cases treated locally only with Seiler's solution as a gargle is sixteen days.

The average quarantine period of fifty-seven cases admitted to the hospital during January, February and March, 1914, comprising all cases discharged with the required cultures, is twenty-one days.

Lactic acid bacilli in our experience hasten the disappearance of diphtheritic membrane, but will not produce cultures negative to the bacillus.

521 Lowry Building.

Longevity in Indiana.—In the Indianapolis *Star*, May 17, Dr. William B. Clarke gives a long list of names of men and women who surpassed the age of 90, of whom forty-nine reached 100 or more. Of these, one lived to be 120, one was 119, another 115 and still another 114. Six died within a few weeks or months of the century mark. Eight centenarians died in 1912. Fifteen physicians reached ages between 87 and 100, five of whom are still living. One physician, Dr. Pierre Beaugrande, of Mishawaka, reached the century mark, dying April 10, 1914. The next oldest was Dr. W. H. Wishard of Indianapolis, who died Dec. 9, 1913, at the age of 97 and some months.

THE USE OF HERUDIN IN THE TRANSFUSION OF BLOOD[*]

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AND
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The present communication is the last of three reports on experimental work undertaken to develop a more widely useful method of blood transfusion than those already existent. This work was inspired by the recent advances in the study of blood coagulation by W. H. Howell and other investigators of the Baltimore school, which suggested that the practical difficulties of developing a safe and easy transfusion method might be met on a more rational basis in the light of better knowledge; and that the newer laboratory methods of estimating the various factors of coagulation would be a help in forming a more precise judgment as to the efficacy or non-efficacy of measures calculated to prevent harmful changes in transfused blood.

The first part of our experimental work was concerned with influencing the initiative changes of coagulation through preventing or hindering thromboplastin formation by the use of paraffin and a suitable instrumental technic.[1]

The second part of this work resulted in the further development of a practical form of apparatus adapted to paraffin and herudin methods, and especially designed to enable a single operator to perform a transfusion, if necessary, without trained assistance.[2]

The third part of our investigations, concerning herudin, has been in progress along with the work already reported, but we have thought best to reserve the publication of this work until satisfied that the results warranted practical application.

Oxalated, citrated and fluorided plasmas are well known in the physiologic laboratories, and sodium citrate is reported to have been used as an anticoagulant for small quantities of transfused blood. Oxalate and citrate solutions act by fixing the calcium of the blood, which is a necessary factor in spontaneous coagulation. This decalcification is, of course, a change produced by a chemical reaction in the blood, and is theoretically, at least, undesirable. The use of herudin as an anticoagulant is not open to this objection.

Herudin is the active principle of a secretion derived from the buccal glands of the pond-leech, *Sanguesuga medicinalis,* and has been classed by Franz as a secondary albumose. Its physiologic properties are variously regarded by different investigators. Morawitz believes that it acts by neutralizing thrombin and prothrombin (thrombogen). Shittenhelm and Bodong believe that it neutralizes neither of these factors but reacts with some, as yet unknown substance, which is derived from the plasma. Mellanby concludes, from what appears to be substantial experimental evidence, that herudin contains an antibody for prothrombin and also a very energetic antibody for thromboplastin (kinase).

It may be concluded fairly from the available evidence that herudin has a decided effect on the prothrombin-antithrombin balance and that it has a neutralizing action on thromboplastin. This action is best illustrated diagrammatically.

The scheme of representation is based on Howell's theory of the mechanism [illegible] nd provides, we believe, an adequate [illegible] phenomena which have been observed. According to this theory the potential factors of coagulation may be expressed as shown in the diagram of the circulating blood (Fig. 1 *A*). The fibrinogen and calcium occupy a neutral position but have a potential affinity for prothrombin. The antithrombin and prothrombin have an affinity for each other and are loosely combined. This combination constitutes a balance, the so-called antithrombin-prothrombin balance, which, in normal circulating blood, is not quite equal, because there is a slight preponderance of the antithrombin. If anything happens to upset this balance, so that the antithrombin side is weakened, then some of the prothrombin is released, and, in the presence of free calcium, becomes thrombin; and this thrombin reacts with fibrinogen to form a clot.

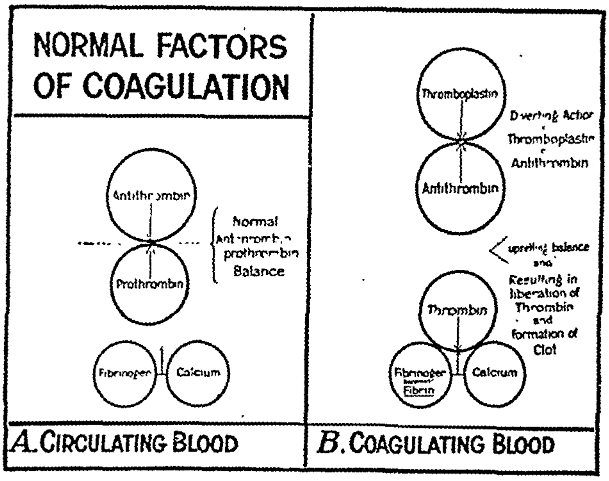
NORMAL FACTORS OF COAGULATION
Antithrombin
Prothrombin
Normal Antithrombin prothrombin Balance
Fibrinogen
Calcium
A. CIRCULATING BLOOD
Thromboplastin
Diverting Action of Thromboplastin on Antithrombin
Antithrombin
upsetting balance and
Resulting in liberation of Thrombin and formation of Clot
Thrombin
Fibrinogen
Fibrin
Calcium
B. COAGULATING BLOOD

Figure 1.

This action is seen in Figure 1 *B*. Here the coagulative process is initiated by the advent of another element, thromboplastin, which, having a very marked affinity for antithrombin, diverts it from its prothrombin attachment, and clotting ensues in the manner indicated.

In Figure 2 it will be seen that the action of herudin is to intervene and bind the thromboplastin, thus preventing the deviation of antithrombin from its prothrombin attachment.

There is considerable literature on the experimental use of herudin and there are some reports on its therapeutic use by intravenous injection for eclampsia, but no mention of its use as an anticoagulant for transfusing human blood.

From our experimental work it has become evident that herudin affords a convenient alternative for the paraffin method of transfusion under most circumstances. The amount of herudin necessary, with our apparatus, is so small that its use may not be contraindicated even in those pathologic conditions in which there is already an excess of antithrombin or a deficiency of prothrombin in the circulating blood of the recipient.

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[*] The spelling used in this article for the name of the active principle of the secretion derived from the buccal glands of the pond-leech is that given to it by the discoverer, Friedrich Franz.—Ed.

[*] Because of lack of space, this article is here abbreviated by omission of the bibliography. This, however, will appear in the author's reprints, a copy of which will be sent by the authors on receipt of a stamped, addressed envelope.

1. Satterlee, H. S., and Hooker, R. S.: Experiments to Develop a More Widely Useful Method of Blood-Transfusion, Arch. Int. Med., January, 1914, p. 51.

2. Satterlee and Hooker: The Further Development of an Apparatus for the Transfusion of Blood, Surg., Gynec. and Obst., 1914 [not yet published].

Sievert has published a series of experiments which indicate that intravenous injections of herudin in rabbits are toxic in very large doses, that is from 25 to 50 mg. per kilogram of body-weight, the toxicity showing itself by changes in respiration and temperature, apathy, somnolence and albuminuria. Sievert states that the higher dosage, if quickly repeated, may result fatally, and that necropsy reveals hyperemia and petechial hemorrhages of the kidney and spleen but no other lesions. Other observers have found comparatively little or no ill effect from the intravenous use of large doses of herudin. Kaposi has given 40 mg. of herudin in normal salt solution by intravenous injection to a 2-kg. rabbit without harming the animal, and designates this proportion, 20 mg. per kilogram of body-weight, as the normal dose for experimental work. Rimann and Wolf, using this dosage, particularly state that no disturbance of health was noted as a result. Cowie has given thirty-five intravenous injections of herudin to a rabbit in doses increasing from 10 mg. to 22 mg. in twenty-six days, and maintained the last-mentioned dosage until the final injection, the total period of treatment covering fifty-four days. At the end of this time the animal had gained in weight and was in every respect perfectly well. Bodong has given from 23 to 73.25 mg. per kilogram of body-weight to rabbits, and states that it has no influence on the circulation or the respiration and is in no other way harmful to the animal. Von Hertzen and Ohman have confirmed Bodong's observation in a series of twelve experiments and concluded that herudin has no disturbing effect on the heart and blood-vessels. Abel, Rowntree and Turner have used very large quantities of herudin in "vividiffusion" experiments on dogs without apparently impairing the normal physiologic condition of the surviving animals. Dienst reports that he has given 200 mg. in 50 c.c. of salt solution by intravenous injection to a patient with very severe eclampsia, with most excellent results; and Engelmann has reported fourteen cases of eclampsia treated in this way with doses of from 200 to 300 mg.

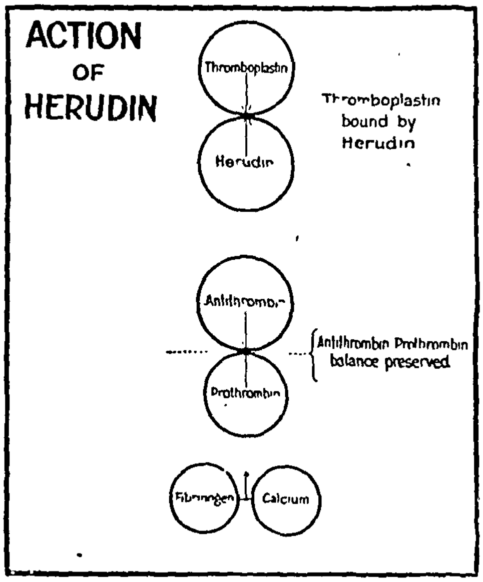

Figure 2.

Rimann and Wolf, in a series of eight experiments on the circulating blood of rabbits, have found that 20 mg. of herudin per hundred gm. of blood (normal dosis of Kaposi) renders the blood uncoagulable for four and a half hours, and that 10 mg. per hundred gm. of blood results in a shortening of the period of incoagulability to from one and a half to one and three-fourths hours. In these experiments the herudin was injected intravenously and the amount of circulating blood was calculated as one-tenth of the body-weight. The evidence of a coagulative tendency in the circulating blood following the injection was obtained by introducing a thread of catgut within the blood-current, according to the method of Trendelenburg. This catgut was withdrawn at varying intervals and the earliest appearance of fibrin formation was noted.

EXPERIMENTAL BASIS OF THE METHOD

Our first aim in experimenting with herudin was to determine the minimal amount of this substance which, when used in conjunction with the best available technic, would serve to prevent coagulative changes for a sufficient length of time to insure a safe transfer of blood from donor to recipient. The first experiment of this series was designed to show the amount of herudin necessary to defer coagulation from one-half to three-quarters of an hour when mixed with blood which was withdrawn directly from the vein so that there was the least possible chance of contamination with traumatized tissue. In this experiment no paraffin was employed, the blood being taken from a vein in 1-c.c. glass pipets and transferred immediately to six glass tubes containing varying amounts of herudin in 0.9 per cent. sodium chlorid solution.

From this experiment it was estimated that about *3.5 mg. of herudin to 100 c.c. of blood would be* requisite for purposes of transfusion without the aid of paraffin, provided good technic was employed in obtaining the blood free from admixture of tissue juices.

This, in actual trial with our regular apparatus, was found to be the case; but the time of onset of coagulation varied within fairly wide limits — from seven to fifteen minutes.

When a paraffin coating was applied to the tip and the neck of our transfusion pipet it was found that the amount of herudin could be reduced by half, or to 1.5 to 1.8 mg. per hundred c.c. of blood; and that under these conditions there was also a twofold lengthening of the time of onset of coagulation. This meant a fourfold increase of efficiency of the herudin in the presence of a paraffin lining of the tip of the transfusion pipet.

As compared with a 30-c.c. piston-syringe with cannula 1 mm. in diameter and 30 mm. in length, 4.0 mg. per hundred c.c. of blood gave a clotting-time of ten minutes and thirty seconds for the syringe method, whereas 1.5 mg. per hundred c.c. of blood gave a clotting-time of thirty minutes for the paraffin-sealed pipet; and this, by a simple computation, shows a relative efficiency of approximately 1:8 in favor of the pipet.

To demonstrate the effect of herudin as applied to our method of transfusion, we have appended a table including all of our experimental and clinical transfusions with herudin in which no special factors were introduced (as varying pressures in delivery of blood, etc.), which would influence the onset of coagulation in the blood which was reserved in the pipet for observation. Experimental Transfusions 5 and 6, in which no paraffin was used as a lining for the tip of the pipet, are included in this table for the special purpose of comparison with our preferred method, in which the tip of the pipet is paraffin-sealed and lined.

EXPERIMENTAL AND CLINICAL TRANSFUSION WITH HERUDIN

Case and Experiment No.	Amt. of Blood Transfused c.c.	Amount of Herudin Used mg.	Dilution of Herudin with NaCl Sol.	Time of Onset of Coagulation, Minutes	Time of Complete Coagulation, Minutes
*Exp. Transfusion 5	160	3	1/1,000	†	12
*Exp. Transfusion 6	150	3	1/1,000	†	13
Exp. Transfusion 2	100	5	1/1,000	40	†
Exp. Transfusion 7	150	3	1/1,000	22	†
Exp. Transfusion 11	200	3	1/500	29½	33
Clin. Case 1:					
Cylinder A	200	3	1/500	20	†
Cylinder B	200	3	1/500	16	†
Clin. Case 2:					
Cylinder A	220	3.4	1/450	35	†
Cylinder B	220	3.4	1/450	30	†
Exp. Transfusion 15	160	3	1/500	21⅚	†
Exp. Transfusion 17	150	3	1/500	28½	35
Exp. Transfusion 18	220	3	1/500	35	38‡
Exp. Transfusion 19	220	3	1/500	30	38

* In these experiments the tip of the pipet was not lined with paraffin.
† Not observed.
‡ No clot at 38.

PRACTICAL APPLICATION OF THE METHOD

In making use of herudin for transfusion we have employed our regular pipets and cannulas, but we have dispensed with the paraffin coating of the cylinders. We have prepared the pipets by introducing from 3 to 5 c.c. of a 1:500 solution of herudin in salt solution, flowing this liquid very thoroughly over the interior of the cylinder and draining away the excess through the tip of the pipet just previous to use. From 1.5 to 2 c.c. of this solution, or approximately 3 mg. of herudin, are retained by adherence to the walls of the pipet, and for more than twenty minutes this is sufficient to prevent 220 c.c. of blood, drawn into the pipet, from clotting.

With the exceptions already noted, the operation with herudin is conducted in precisely the same way as with the paraffin-coated apparatus. The preparation of the pipets is the same, except that the first coating of the cylinders with paraffin is omitted. A partial coating with paraffin, however, is advisable. This coating should be done by aspirating the sterile, melted paraffin mixture just within the neck of the cylinder and expelling it again. This use of paraffin, from the tip to the neck, is primarily to insure an airtight junction of the pipet tip with the metal bushing, and of the latter with the neck of the cylinder, but it also has a demonstrable effect in lessening thromboplastin formation during the aspiration of blood, and permits the employment of a minimal quantity of herudin. The herudin method may be employed without any paraffin whatever by using a 1:300 solution of herudin for coating and with care that the interior of the pipet tip is perfectly smooth and brightly polished, and that all connections are tight against air-leakage; but these contingencies are so surely and easily provided for by aspirating a little sterile paraffin just above the neck of the pipet, that the latter method is to be preferred. Any small receptacle with a cover and alcohol heating device will answer the purpose for sterilizing and holding the paraffin. The hardened paraffin may thus be carried with the apparatus, and the sealing process may be done at the time of operation, allowing ten or fifteen minutes for the pipet to cool, before coating with herudin solution.

It would, no doubt, be possible to obtain a more accurate estimate of the coagulation factors in transfused blood, and also of the inhibiting effect of herudin, by quantitative determinations of thrombin and of thromboplastin in specimens of such blood under varying conditions. We believe, however, that the simple observation of onset of coagulation together with the amounts of blood and of herudin, as recorded in the table, justify our conclusions. We hope at some future time to follow our present work with a more complete investigation of the subject with the aid of more precise laboratory methods.

175 East Seventy-First Street.

ARTHROPLASTY FOR INTRA-ARTICULAR BONY AND FIBROUS ANKYLOSIS OF TEMPOROMANDIBULAR ARTICULATION

REPORT OF NINE CASES *

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Arthroplasty, or the technic for the formation of new joints, may be divided into seven different stages in its evolution, and each stage has been initiated or created by the work of a single individual and then his succeeding school. These stages are:

1. The formation of fibrous or flail joints, as of the shoulder and elbow (Langenbeck, Ollier, Julius Wolff and others). These were desired sequences following resections for diseased joints, as tuberculosis, syphilis, pus infections, etc.
2. The restoration of mobility in a bony ankylosed joint by the interposition of muscle and fibrous tissue between the separated ends at the ankylosed joint, as in the mandible (Helferich, 1893, who was the father of this method).
3. Pseudo-arthrosis developing after osteotomies in the neighborhood of joints (Lorenz), as in hip ankylosis.
4. The transplantation of pedicled flaps of fascia and fat and capsule, with the production of a movable, sliding joint and a hygroma (Murphy, 1902), in the mandible, hip, knee, elbow, shoulder and wrist.
5. The homotransplantation of the articular ends and surfaces of bone (Lexer, 1906), particularly in the knee.
6. The transplantation of free fat and fascia (Lexer).
7. The interposition of foreign material to make the joint, from Péan's metallic joint down to Kraske, Baumgarten, Roser and Baer's heterovisceral implantations.

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* Read before the meeting of the American Surgical Association, New York, April 9-11, 1914.

The fourth stage, or the transplantation of pedicled flaps of fascia with fat and capsule, is the one now in vogue. It is to be hoped that the free fascia and fat transplantation of Lexer will with future experience sustain the good results which its originator predicts for it, as there are many cases in which a pedicled fat and fascia flap is not available, on account of the anatomic conditions and particularly the pathologic sequences preceding or associated with the development of the ankylosis.

Heteroplasties and the insertion of foreign material are doomed to disappear from this field of work, as foreign absorbable material, if aseptic, must eventually be supplanted by connective tissue; and while a flexible joint may be present, a movable sliding joint cannot result from such interposition. Non-absorbable metal materials can be serviceable only under a few very favorable conditions.

So much for the general subject of new joint formation or arthroplasty. Concerning arthroplasty of the jaw, I would say that ankyloses of the jaw may be divided into (1) the intra-articular fibrous and osseous and (2) the extra-articular cicatricial varieties. The latter may also be termed the interalveolar or cheek cicatricial fixation, the result of sloughing in the mouth and infections of the subzygomatic zone.

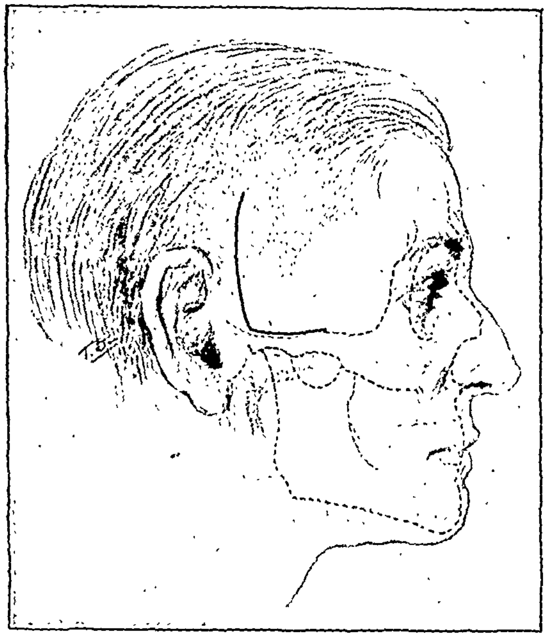

Fig. 1.—The line of incision and the bony outlines at the point of ankylosis.

ROUTES OF INVASION OF THE JOINT

The most common type of ankylosis is the bony. It may be due to:

1. An extension of a suppuration from the middle ear (Case 1).
2. A mandibular osteitis extending to the glenoid cavity.
3. A metastasis from foci of infection elsewhere in the body (Case 9), or it may be part of a general metastatic arthritis (Case 7).
4. It may be the result of a transmitted trauma from the chin (Case 4).

The ankylosis may involve the head of the mandible only, or it may extend across to the coronoid process, so that the lower maxilla is firmly welded to the temporal bone and the base of the zygoma by the new bone formation. It is common to have it include the anterior root of the zygoma.

In most cases the cause of the ankylosis is a middle-ear suppuration. If one follows the anatomic course of these suppurations, it is obvious how the mandibular articulation becomes involved. Infections of the middle ear penetrate in five different directions:

1. The infection may pass backward into the mastoid.
2. It may pass through the posterior wall of the petrous bone into the posterior cerebral fossa.
3. It may penetrate the attic of the ear, form an abscess within the middle cerebral fossa and rupture externally just above the tip of the ear.
4. The abscess may burrow forward and rupture into the glenoid cavity or pass over the base of the zygomatic process into the mandibular articulation.
5. The abscess may burrow forward into the subzygomatic temporal muscle zone and produce a great phlegmonous myositis with subsequent cicatricial contraction.

In the case of para-articular fixation, due to the formation of cicatrices, the condition is usually caused by a sloughing of the mucous lining of the cheek, such as follows typhoid fever, scarlet fever or measles (noma), infections of the alveolar processes, subzygomatic infection from penetrations through the mouth or cheek, from infections of the scalp or cranium by producing destruction of the fascia and temporal muscle which may contract in the process of repair and so cicatrize as to fix the jaw absolutely on that side.[1]

DIFFERENTIAL DIAGNOSIS

The differential diagnosis as to which side is involved is often extremely difficult. When the ankylosis is bony, there is complete fixation of the jaw. When the ankylosis is fibrous, there is some motion in the jaw, depending on the degree of joint involvement (Case 3). In the para-articular ankyloses, there is always some motion in the jaw. In the intra-articular ankyloses, there is sometimes a little lateral motion on the unaffected side, from 1/60 to 1/100 inch on forced effort at opening the mouth, a point in diagnosis which is well worth remembering.

I have learned by clinical observation and experience that a diagnosis of the side involved can be made accurately (when only one side is affected and if the condition occurred early in life) by noting the deviation and contrast formation of the two sides of the face. The face on the side of the ankylosis is full and round and apparently normal in appearance. On the opposite or unaffected side it is flattened and deformed. The chin is always more or less retracted and deviates toward the ankylosed side. If the ankylosis occurs after the patient has attained full growth, this deviation is only slight in degree; but if it occurs in infants or children, the deviation and retraction are marked, increasing in degree as the patient grows older. The earlier the ankylosis has occurred in life, the greater the deformity of the face (Case 1). The fixation of the joint interferes with the proper development of the jaw. The epiphysis of the condyle is the means through which the ramus grows in length.

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[1] Murphy, John B.: Use of Palate Mucous Membrane Flaps in Ankylosis of the Jaw Due to Cicatricial Formations in the Cheek, The Journal A. M. A., July 26, 1913, p. 245.

This growth is arrested by the ossification across the epiphyseal line before the normal time for ossification, which is the fifteenth year. All of the other five centers of ossification are united by bony formation before birth. The absence of use of the jaw undoubtedly is a contributing factor to its aplastic condition. When the ankylosis is a recent one there is not much deformity (Case 4).

PHYSICAL FINDINGS

The physical findings in these cases are the following:

1. There is flattening of the jaw on the unaffected side, most pronounced near the tip of the chin.
2. When the patient attempts to open his mouth, the teeth move from 1/60 to 1/100 inch downward and deviate a little in the direction of the ankylosed side, because of a slight sliding forward of the mandibular articulation on the unaffected side as the muscles of the neck are put on tension in the effort made to open the mouth.
3. A sliding motion on the unaffected side can be felt by the palpating fingers, and the muscular activity on that side is very much greater on attempted opening of the mouth than on the ankylosed side.
4. The muscles on the ankylosed side are more atrophied than those on the unaffected side.

In only one case (Case 1) of this series of nine intra-articular ankyloses of the temporomandibular articulation was there failure to diagnose the side affected, and in that case I was entirely misled by the history given us. All the data, including the mother's information, pointed to the left side as the one involved in the original lesion (a middle-ear abscess which had been opened and drained), when, as a matter of fact, the ankylosis was on the right side, and therefore the history could not have been correct. That case taught me to base the diagnosis on the points mentioned above rather than on the history.

TECHNIC OF OPERATION

In all of these cases of ankylosis of the jaw of the intra-articular type I have performed a typical and uniform arthroplasty, and the results which we have obtained have justified me in advocating this exact technic for these cases. The technic of this operation is not difficult, but it must be exact in its details in order to secure good results. I have employed the pedicled flap as the interposing material. It consists of fat and the aponeurosis of the temporal muscle, and sometimes includes a few muscle fibers.

In my earlier operations I fixed the tip of the flap to the connective tissue and internal portion of the capsule. Later I abandoned this procedure, and now I fix the flap at the basal angles only; by this method there is not that danger of injuring the internal maxillary artery, an accident which I encountered in one of my early cases. This flap is of the same shape and material as that used in my operations in 1902, but at that time I brought the flap under the zygoma down into the joint, while now I turn it over the zygoma into the joint.

At first I exposed the joint by a perpendicular incision just in front of the ear, extending from 1½ inches above the zygoma in the hair-line downward to the lower border of the zygoma. Later, I modified this incision, curving it slightly forward on the temple at its upper extremity. And then I adopted an L-shaped incision (the one I make now); the perpendicular portion comes down to the upper border of the zygoma and then extends forward along its upper margin for a half to three-quarters of an inch, making the longitudinal portion (Fig. 1). That is a very satisfactory incision, one which leaves a very slight scar, most of it being hidden in the hair. It gives better access to the joint than does the perpendicular incision, because in some of my cases of bony ankylosis, the ankylosis extended forward on the zygoma from the glenoid to the *coronoid process*. The *perpendicular incision* is made for the purpose of securing the fat and fascia of the temporal muscle.

I have divided the ankylosis by means of chisels, Gigli saw or with an olive-tipped dental burr driven by an electric motor. The latter is much more rapid, but, on the whole, is not so satisfactory, I believe, as the chisel. It is needless to point out that the greatest caution is required in the use of the chisel, or the burr for that matter, because of the close proximity of the brain, which is separated from the head of the mandible by a very thin transparent plate of bone only.

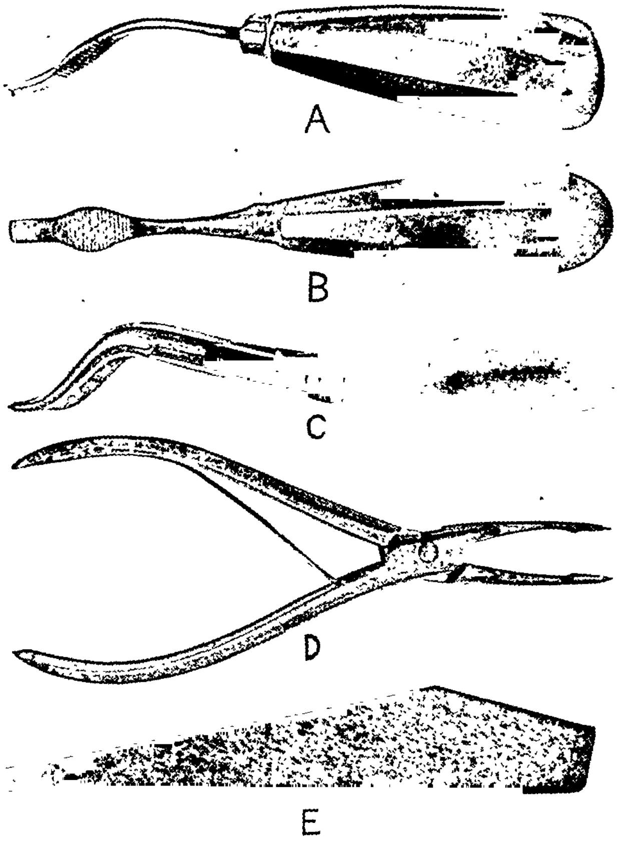

Fig. 2.—*A, B,* Dr. Murphy's periosteotome, side and back view (somewhat reduced); *C, D,* bone-cutting forceps or nippers, side and front view (somewhat reduced); *E,* the interdental block designed by Dr. Murphy to maintain the desired spread of the jaws. It is made of wood and since it is wedge-shaped, the degree of opening can easily be regulated by withdrawing or pushing in the block.

DETAILS OF THE OPERATION

After the incision has been made, as described above, the edges of the wound are retracted, the lower lip being displaced downward over the lower border of the zygoma, in order to give a good exposure of the joint. Then the tissues are separated with a *special* curved periosteotome (Fig. 2, *A* and *B*) all around the anterior surface of the line of union and further separated with a similar instrument around the posterior surface. When the bone is laid bare, the two instruments are passed behind the neck of the bone, one from each side, so that when they are in place they completely encircle the neck of the mandible behind close to the head, holding the soft parts retracted during the excision of the bone, so that the articulation is fully exposed (Fig. 3). The insertion of these instruments and their retention in position during the excision of the bone form the key to the success and safety of the operation. Injury to the internal maxillary artery, which closely hugs the neck of the mandible, is thus avoided. These periosteotomes also act as retractors, keeping the field open for inspection during all of the work. The chisel or burr then divides the bone on the level of the tubercle, without endeavoring to remove the articular surface of the head of the bone, as there is danger of penetrating the base of the skull when an effort is made to excavate all of the head. If bony ankylosis is present, ⅓ inch of the neck is excised, so that one can put the tip of the finger between the divided fragments across the space over the inner margin of the neck at the base of the zygoma. This must be done carefully, and ample bone must be removed, so as to admit of the insertion of the interposing flap of fat and fascia. The periosteum should be left attached to the bone that is removed. The deeper fragments of the bone can be taken out with a small rongeur (Fig. 2, *C* and *D*). If one desires, as soon as the periosteotomes have been passed behind the neck of the bone, a small and full-curved aneurysm needle may be used to carry a silk thread around the neck of the mandible. This thread acts as the carrier for the Gigli saw (Fig. 4), which is used to divide the bone; this method is rapid and effective. The difficulty of inserting the saw is slight, but the acute angulation of the instrument, which necessarily occurs, occasionally causes it to break, giving one some inconvenience in replacing it. On the whole, I do not see that it is handled as easily as the chisel. As soon as the bone is completely divided, the mouth can be opened readily by the anesthetist (Fig. 5).

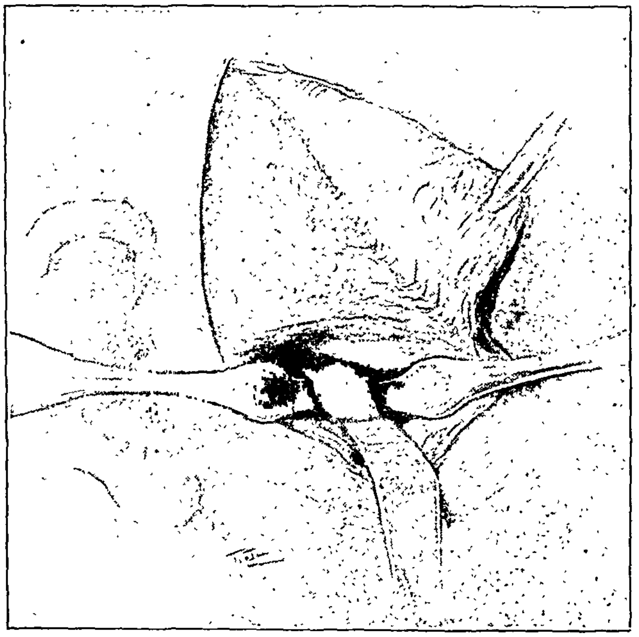

Fig. 3.—The curved periosteotomes encircling the condyle and neck of the mandible.

The interposing fat and fascia flap should now be prepared. The perpendicular incision is elongated up on the temple, say for a distance of 1½ inches. Then a U-shaped flap of fat and fascia is elevated from over the temporal muscle, about ¾ inch wide and 1½ inches long, leaving the base attached to the upper margin of the zygoma. This flap is freed from above downward, folded downward over the zygoma and packed into the bony gap previously described, from which a portion of the neck of the bone has been removed. The flap is packed into the cavity, and at its anterior and posterior basal angles it is securely tacked, with a few catgut sutures, to the fascia and periosteum, so as to retain it in position (Figs. 6 and 7). Then the skin wound is accurately closed with horsehair, dusted with bismuth subiodid and sealed with collodion gauze. No other dressing needs to be applied. The scar is scarcely perceptible and is almost entirely within the hair-line.

No special effort should be made at this time to spread the jaws, as it is important that the lower jaw should remain steadied on the well side in order that the wooden block (Fig. 2, *E*) inserted on diseased side may maintain the wide separation of the molar teeth, until the interposing flap has healed in. This block also prevents compression and necrosis of the flap.

Summarizing the whole technic, the steps of the operation are as follows: (1) the L-shaped incision; (2) division of the ankylosis and removal of a segment of the mandibular neck; (3) raising the flap of temporal fascia and fat; (4) interposing the flap and fixing it in place; (5) closure of the wound.

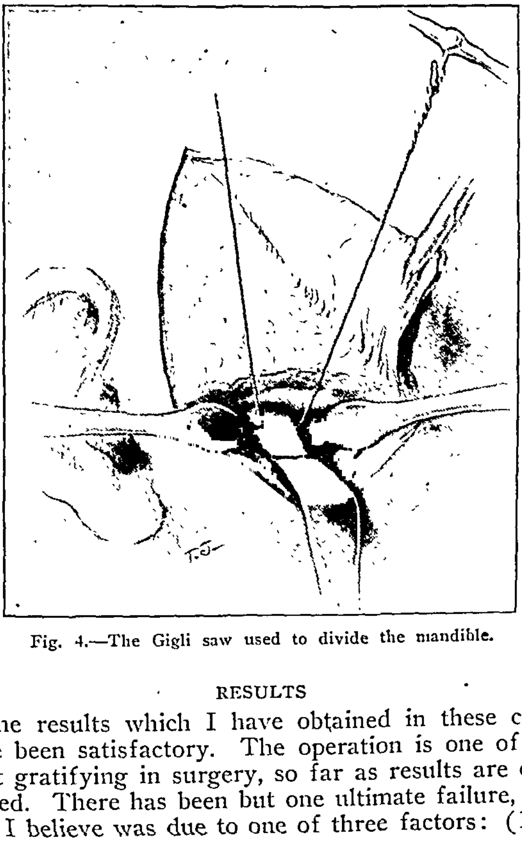

Fig. 4.—The Gigli saw used to divide the mandible.

RESULTS

The results which I have obtained in these cases have been satisfactory. The operation is one of the most gratifying in surgery, so far as results are concerned. There has been but one ultimate failure, and that I believe was due to one of three factors: (1) I did not remove the periosteum with the bone; (2) there possibly was absorption of the interposing flap with ossification of the new-formed connective tissue, as occurs in detached trochanteric fascial flaps in arthroplasties on the knee and other joints, and (3) the parents did not carry out the instructions as to maintaining the wooden plug in position after the patient left the hospital.

In this case (Case 4), seen last nine months after the operation, there was limitation of motion, but not a bony ankylosis. The boy's parents did not attend to the blocking of the teeth since his discharge from the hospital two weeks after the operation, as they were instructed to do. He had good motion immediately after the operation. The immediate successes have been complete.

I have had nine cases of intra-articular ankylosis and two of extra-articular fibrous fixation. In the last-mentioned two cases, I employed the method which I believe is original with me. It consisted in the utilization of mucous membrane pedicled flaps taken from the hard and soft palate as an interposing medium between the divided cicatricial connective-tissue masses for the purposes of preventing a recurrence of the fixation.

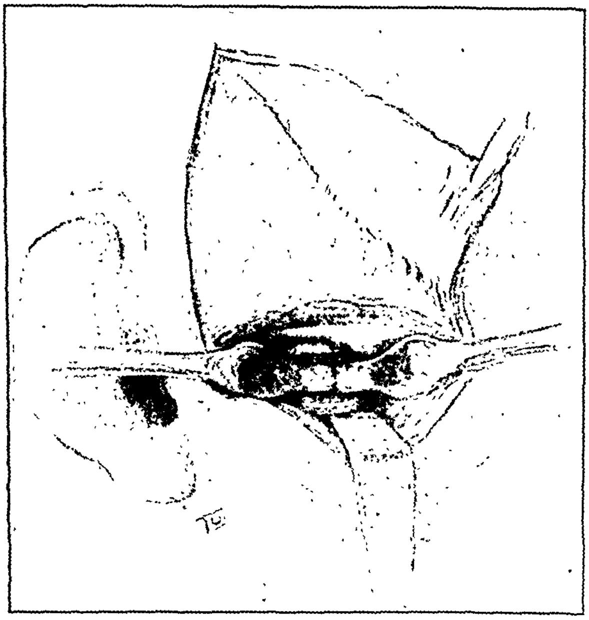

Fig. 5.—The gap left after the exsection, with the curved periosteotomes still *in situ.*

REPORTS OF CASES

CASE 1.—*Ankylosis of Right Temporomaxillary Articulation.*—F. D., boy, aged 15, was admitted to Mercy Hospital, Sept. 3, 1912, on account of absolute fixation and deformity of the lower jaw. The history given by his family was as follows:

> When he was 6 months old a swelling developed rather suddenly in front of the tragus of the "left" ear. A few days afterward pus discharged from the ear through the external canal for four or five days and then the swelling disappeared. There was no swelling over the mastoid then nor has there been since. In fact, there has been no further trouble in that ear. His parents stated that he had no throat or skin trouble and that there was no noticeable deformity of the jaw then. Not until twelve months after the ear trouble did they note that his jaw was fixed. Since then he has been unable to open his mouth.

Examination.—The lower jaw is deformed. The normal angle is absent. The chin is narrow, pointed, recedes and is situated to the right of the median line. The molar teeth articulate normally, but the upper front teeth project beyond the lower about half an inch. The skin for a thumb's breadth to the left of the symphysis menti is contracted. This contraction extends into the tissues of the neck. The lower jaw is pressed firmly against the upper, so that the patient has no motion in any direction. There are no enlarged lymph-nodes perceptible in the neck. There is no discharge from either ear now and no signs of a recent or old mastoid trouble. There is also a marked retraction of the jaw, with a considerable flattening of the left side of the face (Figs. 8 and 9).

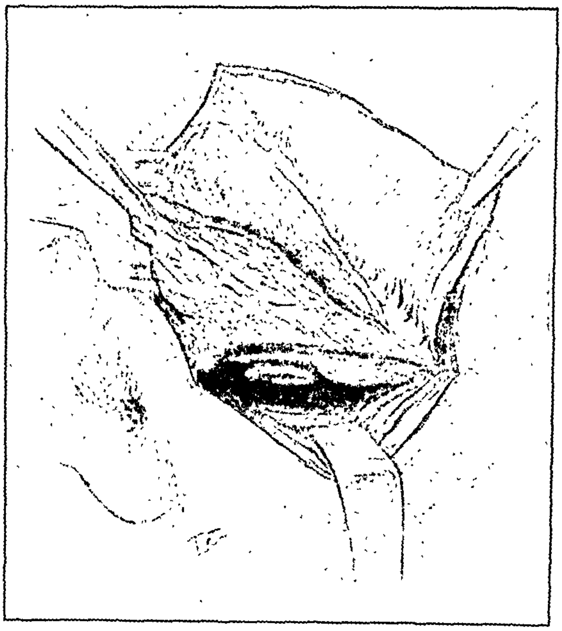

Fig. 6.—The temporal fascia and fat flap freed and prepared for insertion.

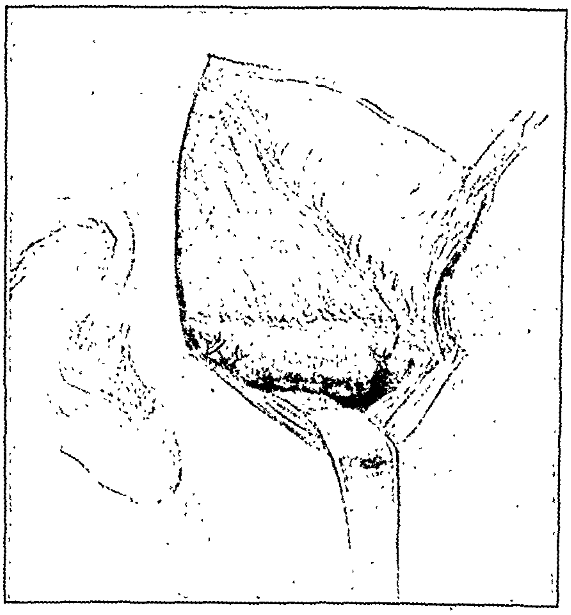

Fig. 7.—The temporal fascia and fat flap secured in its interposing position by sutures.

Operation.—As all the data which could be obtained in this case pointed to the left side as the seat of the trouble, it was concluded to operate on that side. Sept. 7, 1912, a 2-inch perpendicular incision was made, extending along the front of the ear on the jaw, commencing an inch and a half above the zygoma and extending down to its lower margin. Most of the incision was in the hair-line, so that very little of the scar would be visible later. The tissues were divided close to the ear, retracted forward on the cheek and down below the zygoma out of the field of operation. The joint was exposed at once. There was no intra-articular ankylosis, but a capsular contraction was present, the result of the long fixation of the joint. The attachment of the temporal muscle to the mandible was freed, but the jaw remained fixed.' A second incision was made just beneath the angle of the jaw parallel with the ramus, and through this the masseter was freed from its attachment, as well as the internal pterygoid. Still there was not a particle more motion in the jaw than before.

The roentgenograms in this case were very indefinite, as they usually are in these cases, and no assistance was received from them.

This being one of the early cases of ankylosis of the jaw, I had not yet learned to recognize from the facial deformity which side was involved. Later, I learned that the full side of the face was the one to attack and not the flattened side. The failure to get the jaw to drop after the division of these three muscles led me to the conclusion that a mistake might have been made by the parents and friends of the boy in giving us the history, and that it was the right and not the left side which had been involved primarily when he had his ear trouble. Therefore I immediately exposed the right mandibular articulation.

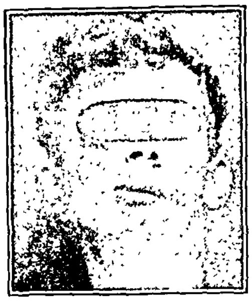

Fig. 8 (Case 1).—Marked flattening of left side of face and fulness of right side. Considerable deviation of chin to the right of the median line.

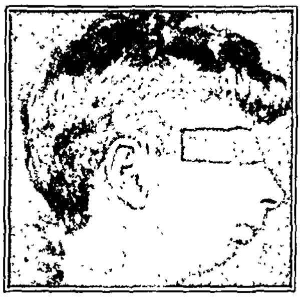

Fig. 9 (Case 1).—Great retraction of the skin; in fact, there is hardly any chin. This is characteristic in these cases, when the condition occurs early in life.

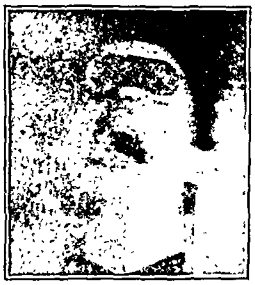

Fig. 10 (Case 1).—Six months after operation; patient's mouth wide open.

An incision similar to that which was made on the left side was made in front of the right ear. The zygomatic attachments were divided at the ear and retracted onto the face out of the field, and when the joint was exposed, I found a bony ankylosis of the articulation, extending forward to the tubercle on the zygoma. It was one solid bony mass. This showed conclusively that the error had been made by the boy's parents in stating that it was the left side that had been involved in the middle-ear infection. My findings showed that it must have been the right side. This ankylosis was divided about a line below the anatomic articulation with a carpenter's narrow straight chisel, a portion of the condyle of the mandible was removed and the jaw immediately dropped down. There was free motion. A flap was then raised from the temporal muscle, consisting of fascia and fat. The tip of the flap was turned down into the joint and interposed between the temporal bone and the mandibular neck, so as to prevent the recurrence of the ankylosis. The flap was tacked in place at its tip to the internal capsule on the neck of the mandible with a few chromicized catgut sutures. The zygomatic attachments were replaced in their normal position and fixed. The deeper portion of the wound was closed with catgut and the skin incision with horsehair. The wound on the left side of the face was also closed with horsehair. Collodion gauze dressings were applied.

Result.—On the morning of the next day the patient was able to open his mouth voluntarily far enough to introduce two fingers. Further progress was uneventful. He had motion in his jaw, free and voluntary, and no pain. The stitches were removed on the sixteenth day. There was primary wound healing. The range of motion was increased rapidly by placing a wooden wedge between the teeth. Word was received from the boy six months later that he could hold an apple in his mouth (Fig. 10).

This case is interesting because of the fact that ossification occurs in certain white fibrous structures in the embryo, and these structures have a tendency to ossify in postnatal life, if subjected to infection or irritation.

The result in this case was encouraging in every way, and in none of the subsequent cases did I fail to make a correct diagnosis as to which side was involved.

Case 2.—*Ankylosis of Right Temporomandibular Articulation.*—A. D. C., man, aged 24, was admitted to Mercy Hospital, April 9, 1913, on account of ankylosis in the lower jaw. Eighteen years ago he was kicked by a horse on the left side of the jaw just posterior to the mental angle, and sustained a compound fracture at this point. The wound suppurated and discharged pus for about two months, when a sequestrum of bone or a tooth — he does not know which — was extruded from the wound, which then healed. Immediately after the accident the patient also had a discharge from the right ear which persisted for some time, he does not know just how long. He never had any pain in the ear before the discharge appeared or afterward. The fixation of his jaw was consequent to this ear discharge. In order that he might feed himself the upper right canine and bicuspid were removed (Fig. 11). The personal and family histories were otherwise negative.

Examination.—The lower jaw was fixed and immovable. The right side of the face was full and round (Fig. 12). The left side was slightly flattened from the angle of the jaw to the chin. The latter deviated to the right of the median line; the patient also had a considerable retraction of the chin. The roentgenogram (Fig. 13) showed a complete obliteration of the right temporomandibular articulation. There was a bony ankylosis extending forward on the tubercle of the zygoma.

Operation.—April 17, 1913, the articulation was exposed by a 2-inch curvilinear incision beginning at the lower level of the tubercle of the zygoma half an inch in front of and on a line with the external auditory canal and extending upward into the hair in a curved direction. By retracting the wound edges and elevating the periosteum with a periosteotome, the site of the articulation was exposed. All anatomic landmarks were lost. An elevation that felt like the head of the mandible was visible and there was some fibrous tissue resembling the capsule of the articulation. There was no motion in the joint. The periosteum was very carefully removed from the head of the bone, and the ankylosis was divided with a narrow straight chisel. It extended forward to the tubercle, binding the mandible firmly to the zygoma. The head of the mandible was then removed with a bone-cutting forceps, leaving a space half an inch in width in which was placed the flap of fat and fascia deflected from the temporal muscle. The temporal flap measured 2 inches in length and an inch in width. It was raised from the temporal muscle and dropped down over the zygoma into the glenoid fossa, so as to cover the raw bony surfaces completely. The tip of the flap was fastened to the capsule on the internal surface of the mandible by means of a few tacking catgut sutures. The basal angles were likewise fixed. The skin wound was closed in the usual manner.

The jaw moved quite freely after the operation. It was found that the opposite articulation was quite stiff, owing to a fibrous fixation, but nothing was done at this time to overcome it, as I preferred to keep it set until the wound healed and the vitality of the flap was assured. A week later the patient was again anesthetized and this fibrous fixation was overcome by forcibly prying open the mouth, care being taken not to injure the teeth or to fracture any of the bones. Success attended this effort.

Result.—The day following the operation, the patient had free voluntary motion in the jaw, which increased rapidly in range. The stitches were removed on the tenth day. There was primary wound healing. The mouth could be opened for 1 inch. When the patient left the hospital on the twenty-second day he could open his mouth for a distance of an inch and a half. A report received nine months after the operation states that the result is a most satisfactory one (Fig. 14).

There are several interesting points in connection with this case which bear emphasis. This man was kicked by a horse on the left side of his face and had a discharge from the right ear. He had no scar on the right side of the face. He evidently had a metastatic infection in the right temporomandibular articulation, and the abscess opened into the ear. He did not have an extension of the infection throughout the entire length of the chin, such as one encounters in mouth infections, typhoid infections or phosphorus necrosis, in which the whole lower jaw from symphysis up to the mandibular articulation may be involved, so that the head of the bone becomes necrotic and is exfoliated. In those cases the whole jaw may be removed as a sequestrum. There was no evidence that this patient had any such infection. We do know, however, that he had an injury of the left side of the jaw and that he had an infection in the right temporomandibular articulation. That is the condition which produced his ankylosis.

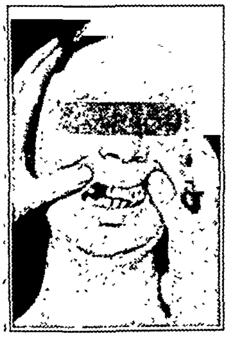

Fig. 11 (Case 2).—The lips are retracted to show the fixation of the jaw and the gap in the denture through which the patient fed himself for eighteen years.

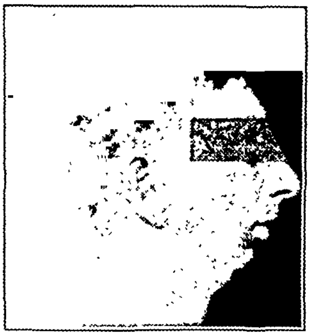

Fig. 12 (Case 2).—Lateral view, showing the retraction of the chin. It is evident that that side of the face, the right, is not flattened. It was the right articulation that was ankylosed.

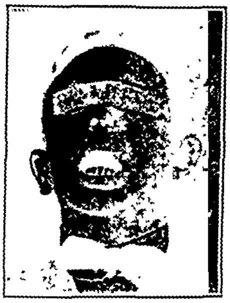

Fig. 14 (Case 2). — Eleven months after operation; patient able to open the mouth practically to the normal degree.

CASE 3.—*Fibrous Ankylosis of Left Temporomandibular Articulation.*—W. B., boy, aged 6, was admitted to Mercy Hospital, May 22, 1913, on account of inability to open his mouth more than half an inch. The boy was an eight months' child, born during a dry labor lasting twenty-four hours. It was early noticed that the child had difficulty in nursing but the reason for this was not discovered. When the boy was 18 months old, the mother noticed that the right side of the face was deformed, that is, it was flattened. The left side appeared to be full and round. About this time the boy had *pneumonia* and when the attending physician attempted to introduce a spoon into the mouth for the purpose of examining the throat, he was unable to do so. When the boy was 3 years of age, his mouth was pried open and a cork was placed between the teeth. As soon as the cork was removed, however, the jaw immediately closed down to half an inch. The patient has never had any other illness than the pneumonia; no nose, throat or ear trouble, and no injury. He has been fed through a gap made in the upper and lower dentures by the extraction of a tooth in each.

Examination.—The physical deformity was striking (Fig. 15). The left side of the face was full and round. The right side was flattened over the body of the inferior maxilla. The mouth was slightly twisted; the chin was displaced to the left of the median line and receded. The patient could open his mouth for a distance of only half an inch (Fig. 16). There was a slight anteroposterior sliding motion in the right temporomaxillary articulation. There was *no* lateral motion whatever. The roentgenograms, one showing the mouth closed and the other open, were somewhat indistinct. The articulation was not clearly outlined, but the coronoid process seemed to change position when the mouth was open, so that I concluded that it was probably only a fibrous ankylosis of the left temporomandibular articulation, an opinion confirmed at operation.

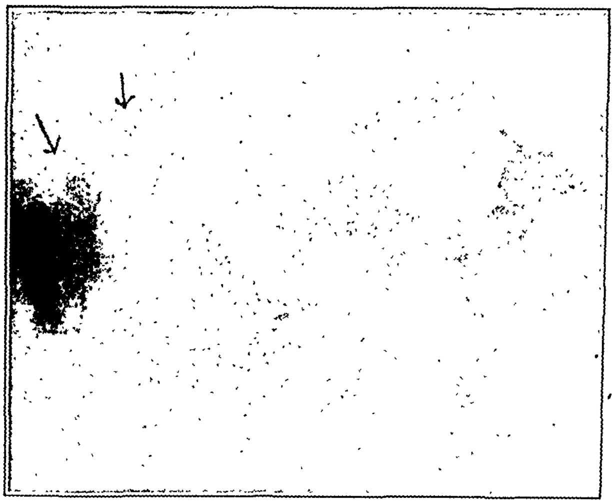

Fig. 13 (Case 2).—Roentgenogram of right side of head made before operation, showing the complete obliteration of the temporomandibular articulation.

Operation.—May 23, 1913, the articulation was exposed by means of the perpendicular incision made immediately in front of the ear, extending from a point half an inch below the zygoma, upward into the hair-line for a distance of 2 inches. By retracting the wound edges the articulation was easily exposed. On moving the jaw it was found that the coronoid process was free, but that there was a fibrous ankylosis between the head of the mandible and the fossa. By means of a scalpel and a narrow quarter-inch straight carpenter's chisel the ankylosis was divided and about ⅓ inch of the head of the bone was removed, so as to make room for the interposing flap, which was reflected from the temporal muscle aponeurosis in the usual manner. The flap was 1½ inches in length and ¾ inch wide. It was dropped down over the zygoma into the joint, so as to cover the raw bony surface of the condyle. It was fixed in place by means of two tacking catgut sutures, one at each basal angle of the flap (Fig. 7). The skin wound was then closed in the usual manner.

Result.—On the morning of the following day the boy had free motion in the jaw in spite of the fact that there was a considerable edema of the left side of the face, especially of the field of operation. The stitches were removed on the ninth day. Primary wound healing occurred. The edema rapidly subsided and motion increased to such an extent that when the patient left the hospital, about three weeks after the operation, he could open his mouth easily a distance of and inch and a quarter (Fig. 17). A report received April 4, 1914, reads as follows: "The result I am sure will please you, as it is a perfectly splendid one" (Fig. 18).

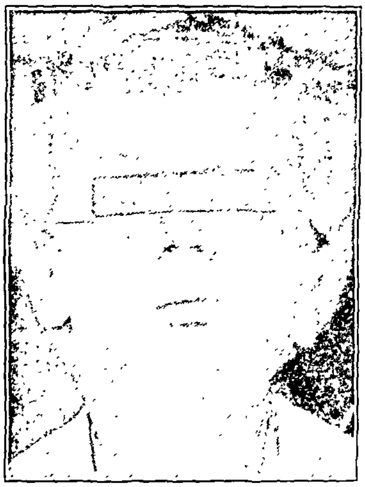

Fig. 15 (Case 3).—The fulness of the left side of the face, the flattening to the right of the chin and the displacement of the latter to the left are very evident.

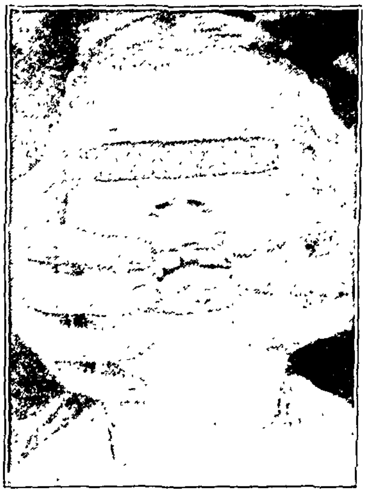

Fig. 16 (Case 3).—The extent to which the mouth could be opened and the gap in the denture through which the patient was fed.

This is the only case in this series in which there was an extensive edema of the face following the operation. The swelling was enormous and was undoubtedly caused by the manipulation of the tissues, and while it temporarily prevented active efforts on the part of the patient to move his jaw, it did not interfere with the final result, which was splendid. This, too, was the only case of intra-articular fibrous ankylosis. It did not involve the coronoid process which was free, as shown in roentgenograms of the mouth opened and closed. It will be noted that the operation which was performed in this case is similar in principle to that performed in the cases of bony ankylosis.

Case 4.—*Ankylosis of Left Temporomandibular Articulation.*—D. C., boy, aged 13, was admitted to Mercy Hospital, June 6, 1913, because of complete fixation of the lower jaw. In September, 1909, the patient fell from a third-story window a distance of 45 feet, landing on a brick pavement. He alighted on his feet, but his knees were flexed forcibly and the body bent forward, so that the chin impacted with the knees. The result was two lacerations of the skin over the chin and several broken teeth. He was picked up unconscious, bleeding profusely from his nose, mouth and ears. He was taken to the hospital and remained unconscious for three hours. When he left the hospital on the sixth day he was unable to open his mouth. His jaw was fixed and has remained so ever since.

Examination.—The right side of the face is slightly flattened. The left side is full and round. He is unable to separate his teeth at all, but because of the retraction of the chin, which is considerable, he is able to feed himself. There is a space of about a half inch on a horizontal line between the upper and lower teeth. Diagnosis: Bony ankylosis of the left temporomandibular articulation (Figs. 19 and 20).

Operation.—June 7, 1913, an incision was made along the upper border of the zygoma, extending from the ear forward on the cheek for a distance of about ¾ inch. The skin flap was displaced downward, and the articulation was exposed. A bony ankylosis extending from the condyle to the coronoid process was found. By means of the straight ¼-inch chisel, the ankylosis was freed and ⅓ inch of the condyle and of the coronoid process was removed. The jaw then dropped down freely. A second perpendicular incision was then made extending from well up in the hairy portion of the scalp downward in front of the ear to the starting-point of the first incision. This gave ready access to the temporal muscle and fascia. The usual flap was raised, dropped down over the zygoma and tucked into the joint, so as to cover all raw bony surfaces. Fixation was maintained by means of two tacking sutures of catgut placed in the angles of the flap. The skin wounds were closed in the usual manner.

Result.—The day following the operation the boy opened his mouth voluntarily for the first time in nearly four years. He rapidly increased the range of motion by means of the wooden wedge which I use in all of these cases and by chewing gum. The stitches were removed on the eleventh day. Primary wound healing occurred. When the patient left the hospital, two weeks after the operation, he opened his mouth freely about an inch and a quarter (Figs. 21 and 22). When the boy was seen again, first about six months afterward and again nine months afterward, he had almost complete limitation of motion of the lower jaw, the result of neglect to carry out the prescribed after-treatment by means of the wooden interdental block. There was no return of the bony ankylosis, however.

This was the only case in this series, except Case 2, which occurred in an adult, in which the ankylosis was comparatively recent and did not come on early in life. It was the result of a distinct and definite trauma and not of an infection. When the articulation was exposed, I could find no trace or evidence of the fracture into the joint, but the history would lead to the belief that there must have been a traumatic fibrous arthritis with subsequent ossification. This is the usual course that follows blows on the chin. The same type of ankylosis occasionally occurs in the elbow-joint when youngsters fall and strike severely on the olecranon.

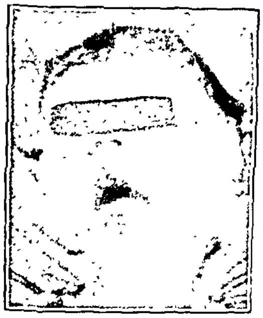

Fig. 17 (Case 3).—Thirteenth day after the operation; extent to which the patient could open his mouth.

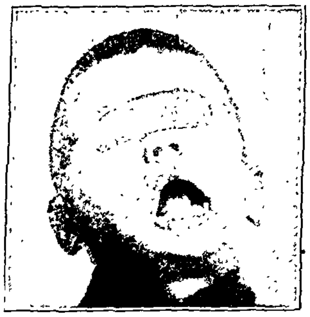

Fig. 18 (Case 3).—Degree to which the patient could open his mouth voluntarily eleven months after operation.

Case 5.—*Bony Ankylosis of Left Temporomandibular Articulation.*—F. C., boy, aged 7, was admitted to Mercy Hospital, June 13, 1913, because of complete fixation of the lower jaw. He was an orphan and little of his history could be obtained. His guardians stated that he had never been able to open his mouth since birth. They did not know anything about the labor. When he was a baby (age not given) he suffered for several months with a discharging ear (which one not known), but he had not been able to open his mouth before that time.

Examination.—It was impossible to separate the teeth. Several teeth had been extracted in the front of the boy's mouth to allow of his being fed (Fig. 23). On an attempt to pry the mouth open, a slight forward sliding motion was detected toward the left side. The left side of the face was full and round. The right side was flattened. The chin was slightly retracted, but the coaptation of the teeth was normal (Fig. 24). Diagnosis: Bony ankylosis of left temporomandibular articulation.

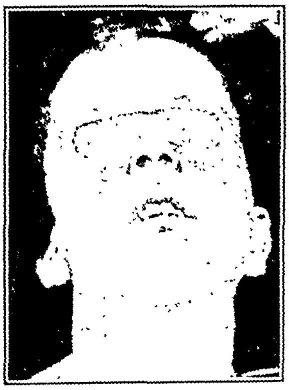

Fig. 19 (Case 4).—There was not much fulness of the left side of the face or much flattening of the right in this case, the ankylosis having existed for only four years, commencing at the age of 9. There is no deviation of the chin, although there is considerable retraction.

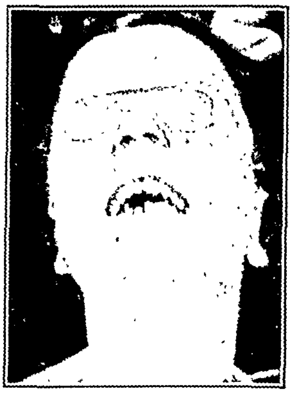

Fig. 20 (Case 4).—Extent to which the patient could open his mouth before operation.

Operation.—June 14, 1913, the articulation was exposed as in the previous case by means of the horizontal incision along the upper border of the zygoma and the perpendicular incision to expose the temporal fascia. It was found that the ankylosis was of the bony type and that it extended forward to the zygomatic tubercle. It was freed by means of a small olive-shaped dental burr, operated by an electric motor, and with a small bone-cutting forceps (Fig. 2, *C* and *D*) ⅓ inch of the condyle was removed. The jaw immediately dropped down. The flap of temporal fascia was then raised from the muscle and inserted in the usual manner. The flap was fixed by means of two tacking catgut sutures placed at its basal angles. The wound was closed in the usual manner.

Result.—On the following morning the boy could open his mouth for about half an inch. Motion was encouraged by means of the wooden wedge, which was inserted between the molar teeth. The stitches were removed on the tenth day. Primary wound healing occurred. When the patient left the hospital on the sixteenth day he could open his mouth easily an inch and a quarter (Fig. 25).

On May 16, this patient returned to the hospital with a complete fixation of the jaw. Examination indicated that there was a bony ankylosis. On the 18th an incision was made similar to the original one and it was found that a complete bony ankylosis had recurred and had extended forward beyond the maxillary tubercle toward the coronoid process. All of the bone was excised, leaving a cavity of ½ inch. A small connective tissue and fascia and fat flap was prepared with the base attached to the cheek tissues below the mandible. This was inserted and fixed by the angular tacking stitches as in previous operations, and the wound was closed in the usual manner.

All of the previously interposed flap had entirely disappeared, probably due to the pressure on account of the failure to maintain the interdental block in the usual way. The day following the operation, the patient had no trouble in opening his mouth voluntarily for ¾ inch.

Case 6.—*Bony Ankylosis of Left Temporomandibular Articulation.*—E. F., girl, aged 8, was admitted to Mercy Hospital, July 10, 1913, because of inability to open her mouth for more than ¼ inch. When she was 2½ years old she had a cold, but was not ill enough to be put to bed. After two or three days she had severe earache on the left side, and a swelling appeared in front of and behind the ear. A week later she had an abscess in front of the ear at the maxillary articulation. The swelling around the ear became larger, very painful and tender, especially in front of the ear. The patient could open her mouth at this time and had no pain when moving the jaw. One week later the left ear began to discharge pus very freely and she also had a very bad diarrhea. She was very ill and had a high (?) temperature. The pain was so severe that in her delirium she pulled out her hair on that side of the head. The swelling around the ear increased in size and extent until the whole side of the face was involved and discolored. Five weeks after the abscesses formed, she was operated on (April 21, 1908). The abscess in front of the ear and the one into the maxillary articulation were opened and drained and the mastoid operation was performed. The wound into the maxillary articulation drained for two weeks; that in front of the ear continued to discharge pus for three months after the operation. The mastoid wound discharged pus for six months, during which time four operations were performed, more bone being removed each time. Following the last operation in October, 1908, the wound closed rapidly.

April 28, 1908, one week after the abscesses were opened, the mother noticed that the baby could not open her mouth more than she can at present. The fixation has remained in spite of repeated attempts at stretching.

Examination.—There was not much deformity in this case (Fig. 26). There was a little fulness on the left side of the face and a slight flattening on the right. The chin was almost in the median line and only slightly retracted. The mouth could not be opened more than ⅛ inch (Fig. 27). The roentgenogram (Fig. 28) of the left side of the face showed entire obliteration of the temporomandibular articulation. Comparing this with the roentgenogram of the right side (Fig. 29), the difference between the two was quickly noted. Diagnosis: Bony ankylosis of the left temporomandibular articulation.

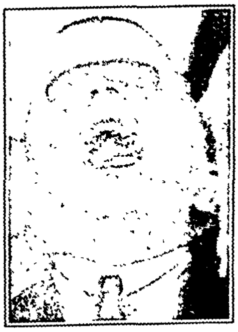

Fig. 21 (Case 4).—About two weeks after operation; extent to which the patient could open his mouth voluntarily.

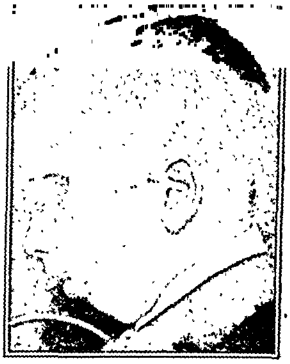

Fig. 22 (Case 4).—Skin wound two weeks after operation. This is a good illustration of the type of incision usually employed in these cases. The retraction of the chin shows very well in this picture.

Operation.—July 12, 1913, the left temporomandibular articulation and the temporal muscle were exposed by means of the L-shaped incision used in the two previous cases, that is, a horizontal incision extending along the upper border of the zygoma and the perpendicular incision in front of the ear, extending upward into the hair. When the articulation was exposed, the diagnosis was confirmed. The ankylosis was freed with the olive-tipped dental burr, as in the previous case. One-third inch of the upper end of the condyle was removed with bone-cutting forceps. As soon as the ankylosis was freed, the jaw dropped down. A flap of temporal fascia and muscle, measuring ⅝ inch in width and an inch and a half in length, was elevated from its bed, and dropped down over the zygoma and into the articulation, so as to cover all raw bony surfaces. Two catgut sutures placed at the basal angles of the flap secured its fixation. The wound was closed in the usual manner.

Result.—The following morning the patient had motion in the jaw, being able to separate the teeth for about half an inch. She was given the wooden wedge to use and when the stitches were removed on the tenth day, she was able to open her mouth for an inch. The wound had healed by primary union, but there was a slight collection of fluid underneath the skin above the zygoma. Three days later when the second dressing was made this fluid was removed by aspiration. It was a dark-colored, clear, odorless fluid, the result of oozing. The fluid did not reform and the patient left the hospital fifteen days after the operation. She was able to open her mouth fully an inch. She returned for examination on the twenty-second day. She could open her mouth easily for a distance of more than an inch and a quarter (Fig. 30). A photograph received six months after the operation shows that she has perfect use of her jaws (Fig. 31).

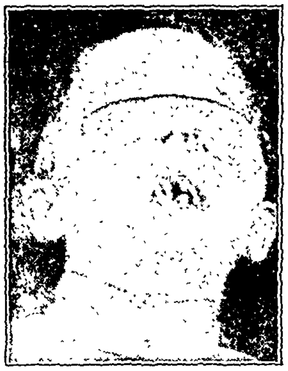

Fig. 23 (Case 5).—Absolute fixation of the jaw and the gap in the denture through which the patient was fed.

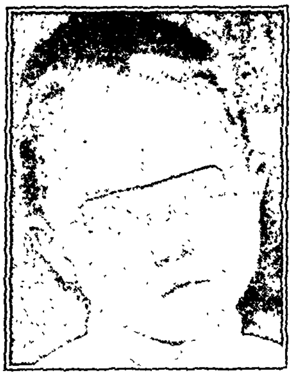

Fig. 24 (Case 5).—Bony ankylosis of the left temporo-mandibular articulation, with fulness of the left side of the face and some flattening of the right side over the body of the jaw. The chin is slightly deviated to the left.

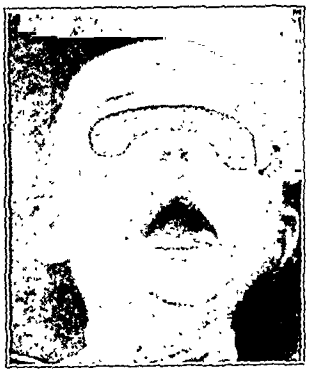

Fig. 25 (Case 5).—Photograph made about two weeks after operation, showing how well the patient could open his mouth.

This was one of the three cases in this series in which a hematoma developed after the operation. The hemorrhage during these operations is very slight, and there is little necessity for ligating bleeding vessels; but I am always very careful to ligate every bleeding point, because my experience in my arthroplasty work on the larger joints has taught me that that is the safest procedure, if one would avoid the occurrence of hematomas, which materially hazard the subsequent course of the case.

Case 7.—*Ankylosis of Left Temporomandibular Articulation.*—L. J., man, aged 31, was admitted to Mercy Hospital, Oct. 31, 1913, with ankylosis of both hips, all of the vertebral joints, including the occiput to the atlas, the left temporomandibular articulation and a partial ankylosis of both shoulders.

In July, 1895, the patient fell from a horse, striking the ground forcibly with the lower end of his spine. He was able to get up immediately and walk, but he had severe pain in the spine. This persisted for several days and then disappeared entirely. In the spring of 1896, he had severe pains in the right hip, the pain coming on slowly and increasing in severity, without any other symptoms referable to the hip. He asserts that he was not subject to tonsillitis or other infections in his nose, mouth, accessory sinuses or elsewhere, either at this time or previously. He consulted a physician, who examined him and discovered a marked scoliosis in the lumbar region. He walked without any support, however, but limped slightly. Some time during 1897, a plaster-of-Paris body-cast was applied to correct the scoliosis. He wore this cast for four years, when a leather jacket was substituted, and this too was worn for four years. During all of this time the right hip became more stiff but less painful. In 1903 he was forced to use a cane, as the right hip was very stiff. In the latter part of 1903, he began to have attacks of pain in the back of the neck, increasing on motion of the head. Finally the neck became stiff, so that he was unable to turn the head in any direction or bend his neck. In March, 1906, the left hip became painful and he was forced to resort to crutches. In June the left temporomandibular joint became affected and gradually power of motion in this joint was lost. The pain disappeared with the loss of motion. In September, 1906, the patient discarded his crutches permanently and not until then did he notice that he could not raise his arms to the full extent. He denied all previous illness, except typhoid at the age of 7; he said that there had been no lues and no neisserian infection.

Examination.—The spine was ankylosed from top to bottom. Both hips were stiff. Motion in the shoulders was restricted in every direction. The lower jaw was absolutely fixed, so that the patient could not open his mouth at all. His head was acutely flexed forward, the chin almost resting on his chest. The conformation of his face indicated clearly that the left temporomandibular articulation was ankylosed. He had had several of his lower teeth extracted, so that he could take food. The right side of the face was flat; the left side was full and round and the lower jaw was slightly retracted.

Operation.—Nov. 10, 1913, the usual arthroplasty for this condition was done, except that instead of an attempt being made to separate the ankylosis with the chisel, the neck of the bone was divided, because there was so much new bone formation in the joint that it was feared that if an attempt were made to seperate the ankylosis the underlying structures might be injured. Therefore, a new joint was made by dividing the neck of the condyle, allowing all of the head to remain in the fossa. The interposing flap was taken from the fat and fascia over the temporal muscle, and because of the sparsity of fat some of the muscle-fibers were removed with the flap. The flap was dropped down over the zygoma into the new joint and tacked with catgut sutures at its basal angles in the usual manner. There was much bleeding in this case and great care was taken to ligate every bleeding point. The wound was closed as usual.

Result.—The first dressing was made, November 22. The wound had healed by primary union and the stitches were removed. There was a considerable hematoma, however, under the skin over the temporal region. Two ounces of a clear, port-wine colored, odorless fluid were removed by aspiration. Microscopic and bacteriologic examination of this fluid was negative. It was aseptic. Two days later another aspiration was made, only half an ounce of fluid being removed. This fluid was likewise negative bacteriologically. The subsequent course of the case was uneventful. The range of motion increased rapidly from half an inch the day following the operation to about ¾ inch on leaving the hospital. The range of motion was limited by the impingement of the chin against the chest. The patient could masticate freely and regarded it as a great pleasure.

Case 8.—*Bony Ankylosis of Right Temporomandibular Articulation.*—M. Van W., girl, aged 11, was admitted to Mercy Hospital, Nov. 6, 1913, because of inability to open her mouth. When 2½ years of age she had a very severe illness lasting from five to six weeks. Her father stated that she had had a sore throat and expectorated purulent material. When she recovered, her jaws were stiff, but she could still open her mouth a little. Six months later she had a boil on the back of her left hand, next, one near the left elbow, then one in the left axilla, one on the left side of the neck and one on the right leg. All of these boils were lanced as they appeared and all discharged pus for a while and then healed. The limitation of motion in the jaw increased in degree until four years ago, when the jaw became absolutely stiff, the teeth being clenched together. The patient is said never to have had any trauma of the face or any other illness except the one mentioned.

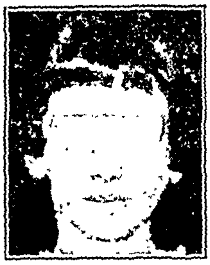
Fig. 26 (Case 6).—There was very little deformity in this case, just a slight deviation of the chin to the left.

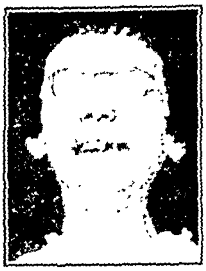
Fig. 27 (Case 6).—Extent to which the patient could open her mouth before operation.

Examination.—There is absolute ankylosis of the right temporomandibular articulation, bony in type. The right side of the face was full and round, the left side was flattened. The chin was retracted and drawn slightly beyond the midline to the right. There was no motion whatever in the jaw. *Diagnosis:* Bony ankylosis of the right temporomandibular articulation (Fig. 32).

Operation.—Nov. 15, 1913, the usual operation was performed, the joint being exposed by means of the L-shaped incision. The ankylosis involved the head of the condyle. The bones were divided with a narrow straight chisel in such a manner as to retain the normal conformation of the joint as much as possible. The gap for the interposing flap was about ⅓ inch in width. As soon as the ankylosis was divided, the mouth could be opened easily by the anesthetist, although the stiffness of the muscles and ligaments on the other side prevented the lower jaw from falling down. The pedicled flap of fat and fascia was raised from over the temporal muscle. It was an inch and a half long and an inch wide. It was dropped down over the zygoma into the joint and was secured by tacking catgut sutures at its basal angles. The wound was closed in the usual manner.

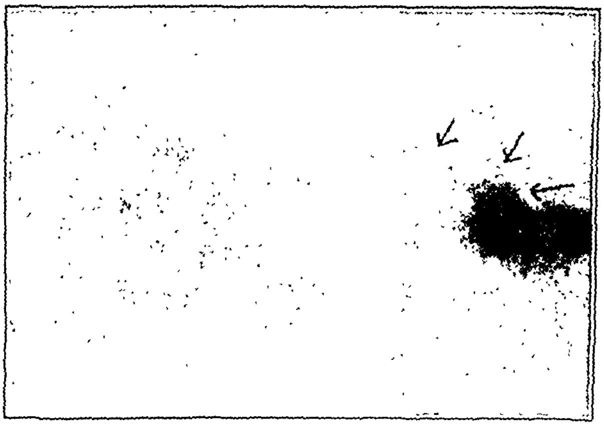
Fig. 28 (Case 6).—Roentgenogram of left side of head made before operation, showing complete obliteration of the temporomandibular articulation. Compare with Figure 29.

Result.—The following morning, this patient, like all the others, could open her mouth easily more than half an inch. The range of motion increased rapidly and when she left the hospital three weeks after the operation the spread of the jaws measured an inch and a quarter. The wound had healed by primary union with no complications. A photograph received from this patient four months after the operation shows a superlatively good result (Fig. 33).

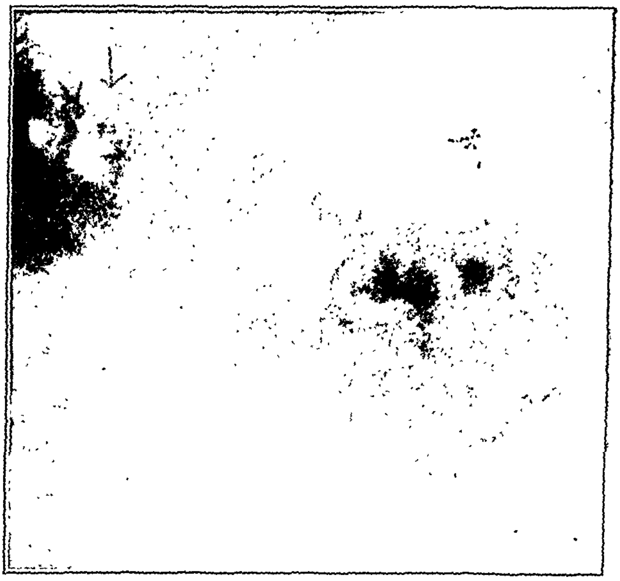
Fig. 29 (Case 6).—Roentgenogram of right side of head made before operation, showing a normal temporomandibular articulation.

Case 9.—*Bony Ankylosis of Right Temporomandibular Articulation.*—J. S., man, aged 25, was admitted to Mercy Hospital, Nov. 11, 1913, because of ankylosis of the right temporomandibular joint and the right hip, with a discharging sinus over the right clavicle and another in the right groin. In 1905, after he had been swimming, he had a chill and immediately afterward he noticed a stiffness in the right knee but no pain, redness or swelling. He does not know whether or not he was subject to an infection in any part of his body at this time, nor had he sustained a trauma. He was able to use his knee without pain or discomfort. The following morning he was awakened by severe pain in the left knee and on examination he saw that it was red and swollen. A physician was consulted immediately, who made a diagnosis of abscess in the knee and prescribed hot fomentations. The following day the pain in the knee was very severe and the joint was greatly swollen. He had a high (?) fever and became delirious. He was removed to

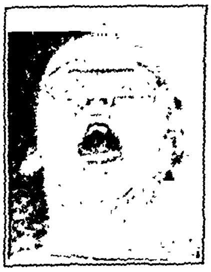
Fig. 30 (Case 6).—Extent to which the patient was able to open her mouth voluntarily, twelve days after the operation.

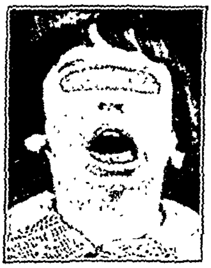
Fig. 31 (Case 6).—Photograph made six months after operation, showing a splendid spread of the jaws.

a hospital, the leg was incised in several places and gauze wick drains were inserted. After the operation he was informed that the bone had been drilled into and found necrotic. He remained in the hospital about ten weeks with considerable elevation of temperature, and was delirious most of the time. The left hand and the left side of the neck had also been lanced and several incisions were made on the back along the spinal column. Pus was discharged from every opening. A large bed-sore developed over the left hip. When the patient left the hospital (he does not remember when), all the wounds had healed, except two in the left leg which were still discharging pus.

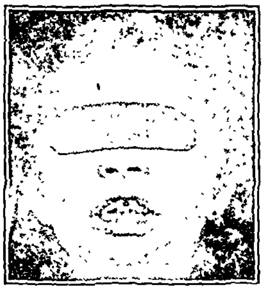

Fig. 32 (Case 8).—The jaw was firmly fixed, and there was the usual gap in the denture for feeding purposes.

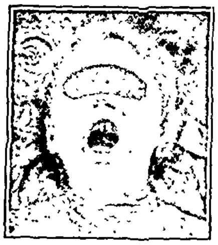

Fig. 33 (Case 8).—Front view four months after operation, showing the mouth open to nearly the normal degree and in a perfectly plumb line.

Two years later the left leg was amputated in the upper third of the thigh. About one month later he first noticed a stiffness in his jaw, but there was no pain in the temporomandibular joints. Four weeks later an abscess appeared over the left clavicle. It opened spontaneously and discharged pus freely and, he thinks, some necrotic bone. Abscesses also formed over the right clavicle and in the right axilla, and they too opened spontaneously and discharged pus. Finally all wounds healed.

In 1910 he began to have severe pain and swelling in the right arm. An abscess formed, was opened and necrotic bone removed and after a short period of discharge, the wound healed. The right elbow was the next joint to become involved, and when the inflammation in this joint had subsided, he was unable to move it. It was ankylosed. The abscesses in the right groin and over the right clavicle, which are still discharging, developed one year ago.

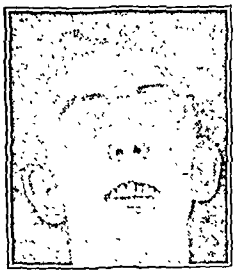

Fig. 34 (Case 9).—Ankylosis of right temporomandibular joint. The jaw is firmly fixed.

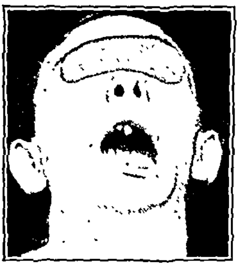

Fig. 35 (Case 9).—Four months after the operation the patient could easily open the mouth 1⅜ inches.

Examination.—The right elbow was firmly ankylosed and flexed to nearly right angles with the arm. The jaw was fixed. The teeth could not be separated even for a fraction of an inch (Fig. 34). The left side of the face was flat. The chin was retracted and drawn slightly to the right of the midline. Diagnosis: Bony ankylosis of the right temporomandibular articulation.

Operation.—What the patient most desired was to open his mouth so that he could feed himself. Therefore only the temporomandibular joint was operated on. Nov. 12, 1913, the usual arthroplasty was performed. The joint was exposed through an L-shaped incision. The ankylosis extended across to the tubercle and the usual interposing flap was placed. The wound was closed in the accustomed manner.

Result.—The morning after the operation the patient opened his mouth voluntarily about half an inch. The range of motion increased rapidly until at the time of the first dressing, made on the thirteenth day, he could open his mouth nearly an inch. The wound had healed by primary union. About 1 ounce of a clear bloody odorless fluid was removed by aspiration. Bacteriologic examination proved it to be negative. The stitches were removed on the thirteenth day. When the patient left the hospital, three weeks after operation, he could open his mouth about an inch and a quarter. The patient was seen again April 3, 1914. He could easily open his mouth 1⅜ inches without the slightest pain or discomfort. Lateral motion of the jaw was perfect and the scar was scarcely discernible (Fig. 35).

The facial nerve, which leaves the skull through the stylomastoid foramen, passing forward across the lower portion of the parotid, is distributed to all of the muscles of expression of the face, and there is danger of injuring that nerve and getting a permanent paralysis of these muscles, particularly the fibers that pass to the temporal and supra-orbital zones. These can all be avoided by the L-shaped incision above the zygomatic level.

There is another element of danger connected with this work, namely, one cannot divide the ankylosis in the line of the original articulation, because if he does he is almost certain to penetrate the base of the skull. Therefore, I always remove the condyle of the inferior maxilla and do not clean out the glenoid fossa to make a cavity.

The location of the internal maxillary artery must always be borne in mind in the removal of bone, as it hugs the neck on the inner side closely and can easily be injured. If it is injured, it should be ligated at the bifurcation of the external carotid. The importance of making the incision above the level of the zygoma can be recognized at once, as it puts the scar-line beneath the hair.

The after-treatment is very important. Mastication should be started at the end of two weeks, preferably not earlier, because otherwise too much fibrous tissue will be produced between the ends of the divided bones. The wooden block (Fig. 2 *E*) should be placed between the molars on the operated side and kept there day and night for two weeks, to prevent possible compression necrosis of the interposing flap. The jaw should not be spread at the time of the operation, as that lessens the effectiveness of the interdental block in protecting the flap.

In all my arthroplasty work there is no operation that gives the same satisfaction to the patients as that for ankylosis of the temporomandibular articulation.

2526 Calumet Avenue.

Accidents on Steam Railways.—According to Accident Bulletin No. 49 of the Interstate Commerce Commission the number of persons killed in train accidents during July, August and September, 1913, was 211; the number of persons injured was 4,011. These figures are compiled from the reports made in 1913 by the railways to the Interstate Commerce Commission. The total number of casualties of all classes amounted to 3,173 persons killed and 56,642 injured. This includes 2,830 persons killed and 19,763 persons injured as the results of accidents sustained by employees while at work, by passengers getting on and off cars, by persons at railway crossings, persons doing business at stations as well as by trespassers and others.

A CASE OF PSEUDOMYXOMATOUS CYST OF THE APPENDIX

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Reference to the literature concerning retention-cysts of the vermiform appendix leads one to believe that either the condition is rather infrequent or many cases are not reported. In 1905, Corning[1] stated that only about sixty cases of cysts of this kind, discovered at operation or at necropsy, had been reported, and that in 7,108 necropsies by various observers there were found only twenty-seven cases (less than 0.4 per cent.). At the same time Corning reported four cases from among 735 appendixes removed at operation and sent to his laboratory. Since then a number of cases have been reported, particularly in the foreign journals. Thus Weinhold,[2] in 1909, removed a large appendiceal cyst from a woman aged 74, having previously made a diagnosis of pedunculated myoma of the uterus. Wilson[3] reports a case in which he had made a probable diagnosis of ovarian cyst, and another which ruptured during bimanual examination. Eden[4] encountered a case in which there was also a large cyst of the right ovary, which had ruptured. Recently, Hammesfahr[5] has described somewhat in detail his findings in two operative cases in which the contents of the cysts were pseudomyxomatous in character.

The formation of these cysts seems to be due chiefly to a chronic inflammatory process in the appendix, with obliteration of the lumen at the proximal end. Kinking of the organ and peritoneal adhesions may be causative factors.

In size, the cysts may range from very small to about 15 cm. long and 7 in diameter. The contents are generally described as thick, gelatinous, translucent material, which at times may be either blood-stained or greenish-yellow. It may be slimy or even watery in character. Most often the substance is made up largely of mucin or pseudomucin, but at times it may be colloid.

Usually the mucosa of the appendix has undergone marked atrophy or has disappeared. It may be pushed through the muscular coat in places to form with the serosa a false diverticulum.

The symptoms are commonly those of chronic appendicitis, but there may be no evidence of the trouble, not even a palpable tumor.

The importance of the condition depends on the possibility of rupture, which may give rise to the so-called pseudomyxoma of the peritoneum. According to Wilson,[3] only twelve cases of peritoneal pseudomyxomas arising in this way are on record; but Trotter[6] suggests that some cases with obscure symptoms may go unrecognized, and that others are regarded as examples of primary colloid carcinoma.

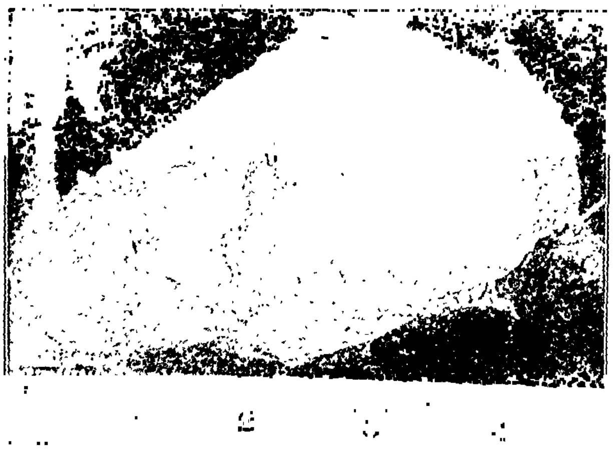
Through the courtesy of Dr. A. O. Singleton, who operated on the patient, we wish to report a case of unruptured, pseudomyxomatous cyst of the appendix.

History.—C. T., negress, aged 48, married, housewife, rather obese, consulted Dr. Singleton in August, 1913. According to the patient the present illness began two years previously, characterized by irregular attacks of pain and discomfort in the right iliac region. Six months before seeing Dr. Singleton she was operated on, she said, for movable kidney, but she did not know what the operator really did. No relief was afforded by the operation.

Examination.—A distinct operative scar was found in the right lumbar region. Palpation revealed a large movable mass in the abdominal cavity, on the right side, but owing to the thickness of the abdominal wall, no additional information could be gained. Diagnosis, probably a floating kidney.

Operation.—This was performed, Sept. 3, 1913. After an incision had been made in the right lumbar region, the kidney was found to be normal and fixed. So the incision was extended and the peritoneal cavity opened. This revealed a large cyst of the appendix, extending upward, free from adhesions, and with a stump of apparently normal appendix about 3.5 cm. long. For about one-third of the length of the cyst there was a distinct mesentery. An ordinary appendectomy was performed. Recovery was uneventful, and since the operation (eight months ago) the patient has been in good health.

Gross Appearance of Cyst.—This measured 11 cm. in length and 5 in its greatest diameter, that is, near the proximal end. The surface was white and irregular, and the contents seemed to be held under slight pressure. It was fixed several days in formaldehyd solution, and then cut open. Thick, white, rather opaque, gelatinous material filled the cyst. This could be picked up in jelly-like masses with the fingers. Chemically the material seemed to be pseudomucin, as portions were dissolved in sodium hydroxid and not precipitated by an excess of acetic acid. The wall of the cyst varied in thickness from 1 to 4 mm. Apparently, dark-colored bits of tissue were embedded here and there in the contents, especially in the distal portion. Keeping the specimen in formaldehyd solution soon caused the contents to swell, so that the edges of the cut wall gaped widely.



Pseudomyxomatous cyst of appendix.

Microscopic Appearance.—Sections of the appendix near the cyst showed normal muscular coats with marked proliferation of submucosal tissue, so that the lumen was entirely obliterated. Sections of the cyst wall, taken from several different places, showed practically nothing but dense fibromuscular tissue, much of which had undergone hyaline degeneration. The nuclei of the peritoneum and of the connective tissue beneath were usually fairly well preserved. In no instance could epithelium be found, except the desquamated bits out in the cystic contents. The mucoid material itself, taking a light hematoxylin stain, was seen to be finely granular and at times fibrillar, with numerous irregular, open spaces.

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[1] Corning: Albany Med. Ann., 1905, xxvi, No. 12.
[2] Weinhold: Monatsschr. f. Geburtsh. u. Gynäk., April, 1909.
[3] Wilson: Lancet, London, 1912, ii, 1496.
[4] Eden: Lancet, London, 1912, ii, 1498.
[5] Hammesfahr: Deutsch. med. Wchnschr., 1913, No. 31, p. 1501.
[6] Trotter: Brit. Med. Jour., 1910, i, 687.

THE EARLY DIAGNOSIS OF LEAD-POISONING *

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The subject of occupational diseases has of late been attracting considerable interest. We are coming to a realization that diseases caused by industrial poisons or conditions under which industries are carried on have a marked influence on the morbidity and mortality of the community. What is of still greater importance, we recognize that such diseases are, at least in a very large measure, preventable. Since 1911 fourteen states of the Union have enacted laws requiring physicians to report to designated state authorities occupational diseases which they are called on to treat. The lists of these occupational diseases in the various states are not uniform, but most of them contain such conditions as poisoning from lead, brass, phosphorus, arsenic or mercury or their compounds; or from wood alcohol, anthrax or compressed-air illness.

In view of the fact that physicians of many states are now required to report the above-named occupational diseases, it is pertinent to inquire as to their early diagnosis. When can a diagnosis be made sufficiently definite to warrant the physician in reporting it to the proper authorities? Of all the diseases in the list none is of so common occurrence as is the poisoning due to lead or its salts, on account of the great variety of industries in which the metal or its salts are used. I therefore propose to consider the early diagnosis of plumbism the most common and by far the most serious in its effects on the health of the working population.

Lead-poisoning presents itself in a great variety of manifestations, and while the diagnosis in a well-marked case is usually not difficult, it may not be so clearly defined in the early stages of the intoxication. The tendency in such cases is not to make the diagnosis unless the objective signs are found which are supposed to be pathognomonic of the disease. This tendency to postpone the diagnosis in the absence of certain objective signs is dangerous and often does incalculable harm. The physician who fails to recognize tuberculosis, for instance, without the presence of tubercle bacilli in the sputum, very often fails to avail himself of the opportunity of arresting the disease in its incipiency. The same is true of lead-poisoning. The waiting for certain signs before establishing the diagnosis may permit the poison to undermine the constitution of the worker beyond any remedial measures. The objective signs supposed to be pathognomonic of lead-poisoning, the presence of one or more of which is still regarded by many physicians as absolutely necessary before a diagnosis can be made, are the lead-line on the gums, basophilic degeneration of the red cells and the presence of lead in the urine and stools.

The technical difficulty of the last one is so great as to preclude it from being made a part of the routine examination in general practice. Moreover, the presence of lead in the excretions is not constant even in well-marked cases of lead-poisoning. On the other hand, lead has often been found in the urine and more frequently in the stools of persons exposed to lead who do not show any evidence of intoxication.

OVEREMPHASIS ON LEAD-LINE AND BASOPHILIC GRANULES

The presence of the lead-line, and basophilic degeneration of the red cells, are objective findings which are in practical use in the diagnosis of lead-poisoning. As a matter of fact, neither one of these signs is pathognomonic of the disease, and while their presence is a valuable aid in the diagnosis of obscure cases, their absence should not be given undue weight against the diagnosis of lead-poisoning, when a history of definite exposure to lead can be obtained.

Basophilic granules in the red cells may be found in severe secondary anemias in which hemolysis has taken place, and are, on the other hand, often absent in cases in which a positive diagnosis of lead-poisoning can be made. In looking over a large number of records in which a definite diagnosis of lead-poisoning was made in the Outpatient Department of the Massachusetts General Hospital, by the clinical symptoms and the presence of the lead-line, I found that in nearly 50 per cent., basophilic granules in the red cells were absent.

Sir Thomas Oliver, who has devoted a great deal of time to the study of lead-poisoning, states that in only few instances of the great number of examinations of the blood that he has made, in early as well as in late cases of plumbism, has he found the basophilic granules. Basophilic degeneration of the red cells, in short, does not possess the diagnostic value which some attribute to it, but can at most be regarded as an important confirmatory sign.

Still greater importance is attached to the presence of the lead-line.

In my investigation of some of the lead industries of Massachusetts several years ago, for the State Board of Health, I had occasion to confer with many physicians who, from time to time, treated patients engaged in these industries, and I frequently found that no matter how suggestive the symptoms complained of were of lead-poisoning, the diagnosis was not made because of the absence of the lead-line. As a matter of fact, the lead-line presents a great many anomalies, and irreparable harm will often be done when a diagnosis of plumbism is not made because of its absence. In the investigation referred to above, I have frequently seen well-marked lead-lines among workers exposed to lead who did not present, at the time of investigation or at any previous time, any signs of ill health. On the other hand, if one looks into the very extensive literature on the subject, one will find many cases of severe lead-poisoning reported in which lead has been definitely demonstrated in the urine and stools, and yet no vestige of a lead-line could be found. Moreover, the lead-line is extremely rare when the gums are in a healthy condition and when the teeth are well cared for. Dr. Oliver fed experimental animals with lead for a long time without observing any lead-line. If, however, an infection of the gums of such animals was produced, the lead-line appeared within a short time.

The distinction between lead absorption and lead-poisoning is not, as a rule, clearly borne in mind. All persons working in lead, unless the most unusual pre-

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* From the clinic of the West Medical Service, Massachusetts General Hospital.

cautions are taken, inhale or swallow some of the poison, but it is excreted through the kidneys and the intestinal tract. As long as the excretion corresponds to the absorption, no symptoms will manifest themselves. If, however, for some reason, the balance is destroyed and the excretion diminishes, lead will be stored up in the tissues and poisoning is the result. The presence of the lead-line simply means that the person has been absorbing lead, and is in itself of no greater weight in the diagnosis of lead-poisoning than is the fact that the patient's history shows that he is working in a lead process, in which we know that he inevitably absorbs lead. A careful inquiry into the nature of the industrial process in which the patient is engaged is therefore of the utmost importance. The history of exposure is the all-important factor in the diagnosis of plumbism.

In cases of non-industrial plumbism, however, in which no history of exposure can be obtained, the presence of the lead-line or of the basophilic granules is of inestimable value in the diagnosis, since it offers a clue for the explanation of certain symptoms which would otherwise be obscure.

The following case-reports, taken from the records of the Massachusetts General Hospital will illustrate the reluctance, even among good clinicians, to make a diagnosis of plumbism in the absence of the lead-line, or stippling:

CASE 1.—A man of 36, a sheet-metal worker for eleven years, handles a great deal of lead in his work, complains of pains in the abdomen, loss of weight, weakness of extremities and attacks of diarrhea followed by constipation. No lead-line.

CASE 2.—A man of 34, a painter for ten years, complains of attacks of colic, headaches, obstinate constipation and general nervousness. No lead-line, no stippling.

CASE 3.—A man of 22, a painter for four years, complains of constipation, attacks of severe abdominal pains and headaches. He looks pale; no lead-line, no stippling.

CASE 4.—A painter of 22, who has worked at the trade for ten years, complains of obstinate constipation, pain in his joints, headaches, numbness and weakness of extremities; he is easily fatigued; no lead-line or stippling found.

CASE 5.—A worker in a rubber factory for six years complains of abdominal pains, obstinate constipation, severe pains in lumbar region, loss of appetite, and general nervousness; no lead-line found.

CASE 6.—A man of 49, a painter for twenty-five years, gives a history of lead-poisoning when he first started his work. He now complains of tremor and weakness of hands so that he frequently drops his brush while at work. He has attacks of abdominal pains, pains in his joints, and is pale. No lead-line or stippling found.

CASE 7.—A man of 38, who worked in a car-factory for fourteen years, and part of whose work consisted of mixing lead, complains of sharp pains in the abdomen, attacks of dizziness, fine tremor of hands, metallic taste in the mouth and pains in the extremities. He lost considerable weight. No lead-line or stippling found.

In none of the foregoing cases was a definite diagnosis of lead-poisoning made. There is no doubt, however, that if a lead-line was present in any of these cases, or if stippled red cells were found, even if the symptoms had been less characteristic, a positive diagnosis of plumbism would have been made. Yet the occupation of these patients was sufficient evidence that lead absorption was taking place, and the symptoms were sufficiently characteristic to warrant a definite diagnosis without the corroborative evidence of the lead-line or stippling.

In consequence of the undue weight which is given to the objective signs, persons who show themselves, by the symptoms of which they complain, susceptible to the influence of lead, are permitted to continue at their work without any additional precautions and without any warning as to the danger to which they are exposed. This is shown by the following illustrative case-reports, taken from the records of the outpatient department of the Massachusetts General Hospital. These patients attended the clinic for a long time, and no diagnosis of plumbism was made because of the absence of the lead-line or stippling. At some later date, however, although the symptoms were the same, the diagnosis of plumbism was made because of the appearance of one or more of the objective signs.

CASE 8.—A worker in a rubber factory came to the clinic complaining of precordial pains, headaches, pains in the arms and attacks of abdominal pains. He had evidence of mitral regurgitation. There was no lead-line, and no diagnosis of lead-poisoning was made. He came again eight months later with the same symptoms but of increased severity. A lead-line was found present at this time, and a diagnosis of plumbism was made.

CASE 9.—A painter of 23 came to the clinic, November, 1907, complaining of pain in the back, numbness and weakness of extremities, abdominal pains, headaches and nervousness; no lead-line was present, and no diagnosis was made. In 1912 he presented himself with the same symptoms. Lead-line and stippling were found and a diagnosis of lead-poisoning was made.

CASE 10.—A painter presented himself at the clinic in July, 1907, complaining of constant severe pain in the upper abdomen, attacks of vomiting, pains in the knees and dizziness. A diagnosis of arteriosclerosis was made. In July, 1913, he presented himself again with the same symptoms. A lead-line and stippling were found. Diagnosis, lead-poisoning.

CASE 11.—A machinist of 28 came to the clinic in 1906, complaining of attacks of severe abdominal pains, bad taste in the mouth, obstinate constipation, attacks of nausea and vomiting. He came many times during 1910 and again in 1911, complaining of the same symptom-complex. In December, 1911, a lead-line was found and many stippled cells. Diagnosis of lead-poisoning was made.

CASE 12.—A worker in a rubber factory, aged 57, came in 1904 complaining of pain in the cardiac area and the right shoulder, pains in hips and legs, weakness of extremities, dizzy spells, easily tired and constipated, also wasting of extensor muscles. No lead-line was found (patient had false teeth). No diagnosis of lead-poisoning was made until 1905, when lead was found in the urine.

CASE 13.—A carriage painter of 38 came in 1903 complaining of pains in the back between the shoulder-blades. There was no record of lead-line or stippling. No diagnosis was made. Later, in the same year, he came complaining of attacks of dull pain in the region of the umbilicus, and sharp pains in the lumbar region which kept him awake for two nights. A history of alcoholic excess was obtained for the last two weeks; no lead-line was found; diagnosis, alcoholism. In 1908 he came again, complaining of pains in his back and in his feet, general weakness and nervousness; no diagnosis was made. Several weeks later he came again complaining of the same symptoms. Lead-line was present at this time. Diagnosis of lead-poisoning was made.

The unwarranted delay so frequent in diagnosing plumbism even in the presence of a definite history of exposure to lead is well illustrated by the last case. For nearly five years this man had been presenting himself at various times at the hospital, complaining of a train of symptoms which, taken together with his work, should have made a diagnosis possible, and yet he was permitted, during all that time, to continue his work without any special precautions, until the lead-line appeared, when the diagnosis of lead-poisoning was made.

EARLY SYMPTOMS OF PLUMBISM

It would of course be folly to attribute to lead all the ill health of lead-workers. The symptoms, therefore, have to be considered carefully before the responsibility of the diseased condition is laid to the industry. The symptoms of early plumbism are not well defined, yet there is a group of symptoms which, when not open to explanation on any other basis must, when a history of exposure to contact with lead has been obtained, be taken as evidence of early lead-poisoning. Indeed, it is important to inquire carefully as to any possible industrial exposure to lead whenever certain ill-defined states of ill health present themselves among workers, when such diagnoses, for instance, as anemia, debility, constipation, lumbago or chronic arthritis are made. Inquiries as to the details of the patient's work should be made, for unless the physician has a familiarity with the various industrial processes, the general designation of the patient's work may not indicate any exposure to lead.

Among the earliest manifestations of chronic lead-poisoning is the pallor of the skin, which is often out of all proportion to the actual anemia — that is, the reduced hemoglobin and red count. Associated with this pallor is a wasting of the subcutaneous fat first noticed in the infra-orbital region and about the buccinator muscles, producing a pinched appearance of the face. General muscular weakness with "rheumatic" pains in the joints, muscles and more particularly in the back, are of frequent occurrence in the early stages of the disease. Among the gastro-intestinal symptoms are anorexia, nausea, attacks of constipation, or constipation alternating with diarrhea. Loss of appetite, from whatever cause, among workers exposed to lead is always a symptom to be taken seriously, for, as has been pointed out by Legge, the absorption of lead is greatly increased when the stomach is empty. The most frequent gastro-intestinal symptom is the more or less characteristic colic generally referred to the lower abdomen, which comes in paroxysms, and may or may not be associated with tenderness. General nervousness, persistent headaches and dull mentality are also among the earlier manifestations. These symptoms should always be regarded seriously when occurring in persons exposed to lead, for they may be the precursors to the more serious nerve-lesions, such as wrist-drop, encephalopathy and to the more insidious and less dramatic changes in the vascular and excretory systems, that of arteriosclerosis and chronic nephritis.

IMPORTANCE OF EARLY DIAGNOSIS OF OCCUPATIONAL DISEASES

The laws enacted in many of the states requiring physicians to report to a central authority certain occupational diseases are measures in the interest of the public health. These diseases are preventable, and the duty of the central authority to whom the reports are made is, or should be, to investigate the cases as they are reported, trace the source of the poisoning, instruct the patients as to precautions, and undertake preventive measures against the occurrence of other cases.

In occupational diseases, as well as in communicable diseases, the most effective weapon in the prevention of their frequent occurrence as well as in minimizing the serious consequences to the worker, leading to permanent injury to health and often terminating in death, is to discover these cases in their incipiency. This responsibility rests with the physician. He is in the vanguard in public health activity. It is through him that the public health authorities are made aware of the existence of preventable diseases, so that proper steps may be taken to detect and eradicate the dangerous spots which threaten the health and life of the community.

There is still another point of view which makes the recognition of occupational disease, whether it is due to lead or other industrial poisoning or conditions under which people are employed, of great importance. To remedy any social evil the first essential is to recognize its presence and its extent. It is only by a realization of the great amount of sickness and incapacity that is produced by occupational diseases that we can expect the proper remedial measures to be brought about. We have at present no available data of the extent of the well-defined specific occupational diseases, and still less adequate is our knowledge of the general effects of various industrial processes on the health of the workers. Our morbidity and mortality statistics, as far as their relation to occupation is concerned, are hopelessly inadequate.

The occupations recorded on hospital records are of little or no value as far as the study of the effects of occupation on health is concerned. The term "laborer," for instance, a designation assigned to a large proportion of the male outpatients, covers every conceivable kind of unskilled labor, and throws no light as to the nature of the work. The term "railroad worker" may mean a locomotive fireman, a gate-tender, or used as in a recent case which came to my notice, to designate the work of a young woman who was folding railroad time-tables in a printing-office.

A careful analysis and recording of the patient's work is essential not only for the diagnosis of the well-known occupational diseases, but also to extend our knowledge as to the effects of certain occupations on mortality and morbidity.

An intensive study in occupational diseases is now being carried on by Miss Susan Holton at the Social Service Department of the Massachusetts General Hospital under the direction of Dr. David L. Edsall. It is only by such intensive work that we may hope in time, by the accumulation of sufficient material, carefully investigated and recorded, to draw any inferences as to the effects of the various industrial processes on health.

SUMMARY AND CONCLUSIONS

The reporting of occupational diseases is a public health measure. Early diagnosis of these diseases is essential both to protect the worker from the more serious effects of the industrial poisons and to gather information as to the prevalence of these diseases.

In the diagnosis of plumbism, the most frequent of occupational poisoning, there is in many quarters a tendency to give too much emphasis to the presence of the lead-line or basophilic degeneration of the red cells. While the presence of these signs is often of great aid in the diagnosis of obscure cases of non-industrial origin, their absence should not prevent a diagnosis when certain symptoms characteristic of early plumbism manifest themselves, more particularly when a history of exposure to contact with lead can be obtained.

The history of exposure is the all-important aid in the diagnosis, and careful inquiry should be made by the physician as to the details of the patient's work, and he should not be satisfied with a general designation which may not give any indication of exposure to lead.

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THE EFFECT OF INTRASPINAL INJECTIONS OF SERUMS WITH AND WITHOUT PRESERVATIVES *

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It is an established fact that the administration of antimeningitis serum by intraspinal injection has practically turned the former 70 per cent. mortality from epidemic meningitis into 70 per cent. recoveries. Accumulated experience, however, has apparently shown that the injection of the serum itself may have been the cause of death in a very small number of cases. These deaths have been explained in a variety of ways, and of these I shall mention here only the statement of S. P. Kramer that they were caused by the trikresol which had been added as a preservative to the serum, a contention which has recently been supported by Hale[1] on the basis of experimental work on dogs and cats.

EXPERIMENTS WITH TRIKRESOL

Because of the importance of this matter I have carried out during the last few months a series of experiments not only with dogs, but also with monkeys, in order to determine what effects are produced when serums containing 0.3 trikresol, 0.3 per cent. chloroform or 0.3 per cent. ether are injected subdurally. As control injections, horse-serum without any preservative, and Ringer solution were employed. In all animals the blood-pressure was recorded either from the carotid artery (dogs) or from the femoral artery (monkeys); the respiration was registered in all by means of a pleural cannula. The intraspinal injections in the dog were made after a laminectomy had been performed, for the results without this were very uncertain; in monkeys, however, the subarachnoidean space was tapped exactly as in human beings by introducing a needle into the second to the fourth lumbar space. The dogs were maintained at a constant level of ether anesthesia by intratracheal insufflation, a procedure which absolutely prevents death from central respiratory causes. The monkeys were kept under ether anesthesia by means of an ordinary ether cone and received no respiratory aid whatsoever, but always breathed spontaneously. The chloroform and ether serums were not warmed before injection.

The results of these experiments are briefly as follows:

Dogs are much more sensitive to the intraspinal injection of 0.3 per cent. trikresol serum than monkeys, but dogs nevertheless tolerate up to 6 c.c. and more per kilogram without danger as a rule, provided that an efficient artificial respiration is maintained. In the dog, stoppage or impairment of the respiration is the great danger; the drop in blood-pressure, though often pronounced after larger doses, does not persist if the respiration is efficient.

ACTION IN MONKEYS

Monkeys, on the other hand, are relatively extremely resistant to 0.3 per cent. trikresol antimeningitis serum, and tolerate injections aggregating more than 6 c.c. per kilogram usually without any dangerous effect on spontaneous respiration. The blood-pressure generally shows a more or less decided drop, but the normal level is regained within some minutes. To illustrate the enormous quantities which a monkey can tolerate, the following experiment may be mentioned: A monkey of 2,835 gm. received intraspinally 21 c.c. of 0.3 *per cent.* trikresol antimeningitis serum (New York Board of Health), 23 c.c. 0.3 per cent. chloroform antimeningitis serum (Massachusetts Board of Health) and 10 c.c. of Ringer solution, and was in excellent condition at the end of the experiment. It is of interest that the same animal had received the previous day 6 c.c. trikresol serum and 15 c.c. chloroform serum intraspinally, and that on both days the respiration and blood-pressure were registered; moreover, on the second day the injections (usually 3 c.c. per dose, sometimes 5 c.c., at seven-minute intervals) were made while the animal had a full left-sided pneumothorax and was therefore not a normal animal.

Both in the monkey and in the dog the effects obtained on the blood-pressure and respiration by trikresol seem partly dependent on an increased intraspinal pressure: local applications of 0.3 per cent. trikresol in saline on the medulla of dogs does not give the same quantitative effect on the respiration and blood-pressure as subdural injections; and in monkeys a single injection of trikresol serum following several injections of normal serum exerts usually a greater effect on the blood-pressure than when trikresol serum is injected first.

Tests with serums containing 0.3 per cent. chloroform, 0.3 per cent. ether or no preservative at all, showed that they exerted qualitatively the same effects when injected intraspinally as trikresol serum, but quantitatively the disturbances of respiration and blood-pressure were definitely less. Chloroform serum caused in general a smaller effect on the respiration and blood-pressure than trikresol serum, but the best results were obtained with 0.3 per cent. ether serum and with serum without any preservative, although both still occasionally produced in the dog stoppages of the respiration lasting a minute or two, and a considerable lowering of the blood-pressure. In the monkey, however, normal serum or ether and chloroform serum produced practically only negligible effects on the respiration and blood-pressure.

THE IDEAL ANTISEPTIC

Without discussing the necessity for preservatives in therapeutic serums, it is clear that a volatile antiseptic would be the ideal one to use, for such a preservative could easily be removed by warming the serum container before injection.

The opsonic index of the same antimeningitis serum kept without antiseptics or preserved by 0.3 per cent.

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* From the Department of Physiology and Pharmacology of The Rockefeller Institute.

[1] For literature references see The Sources of Danger in Antimeningitis Serum, editorial, The Journal A. M. A., May 23, 1914, p. 1661.

trikresol, 0.3 per cent. chloroform or by 0.3 per cent. ether showed practically the same value after one month, according to experiments carried out by Dr. Martha Wollstein.

The experiments show that dogs in which laminectomy has been performed are much more sensitive to 0.3 per cent. trikresol serum than are monkeys in which intraspinal injection is directly made. The monkey in this as in other respects is more nearly related to man; and in view of the rarity of the accidents mentioned above in man it may be inferred that monkeys react to intraspinal injections in a manner more truly representing the effects in him.

It should be emphasized that respiratory failure is the great danger after trikresol injection in the dog, and that it occurs only rarely in the monkey. In my experiments the drop of blood-pressure even if profound was never fatal in the dog or monkey unless the respiration was permitted to fail. This danger was reduced in two ways: by being prepared to give efficient artificial respiration when necessary, and by replacing the trikresol with a volatile antiseptic like chloroform or ether. It must be pointed out, however, that artificial respiration was apparently necessary in some cases even when serums without any preservatives were injected intraspinally.

APPEARANCE OF NON-COLLOIDAL NINHYDRIN-REACTING SUBSTANCES IN THE URINE

UNDER NORMAL AND PATHOLOGIC CONDITIONS AND DURING PREGNANCY *

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While we were studying the question of the possible substitution of aluminum hydroxid cream for the parchment diffusion thimbles in the Abderhalden serum diagnosis of pregnancy, there appeared Warfield's paper[1] on the presence of dialyzable ninhydrin-reacting substances in the urine of pregnant women. This led us to turn our attention to a study of the urine under normal and pathologic conditions and during pregnancy.

LITERATURE

Since the publication in 1906 of Pfaundler's[2] work on the determination of amino-acid nitrogen in the urine, there has remained little doubt as to the appearance of appreciable amounts of this class of compounds in normal urine. This work was confirmed a few months later by Krüger and Schmidt,[3] using a different method. These investigators found amino-acid nitrogen to the amount of from 0.325 to 0.45 gm. in from 5 to 6 per cent. of total nitrogen in normal urine.

Embden,[4] and Embden and Reese,[5] on the basis of results obtained by using their modification of the beta-naphthalin-sulphochlorid method, came to the conclusion that as high as 1 gm. of glycocoll may be eliminated daily under normal conditions.

In addition to the glycocoll compound there were found compounds of other amino-acids which Embden and Reese were, however, unable to identify. The weights of the amino-acid compounds isolated in five normal cases were as follows: 1.62, 2.74, 1.48, 1.73, 2.80 gm. daily. These amounts represent 4.32 to 5.10 per cent. of total nitrogen. This, according to the investigators, expresses the minimal amount. Since 1905 many investigations have been carried out on the amount of amino-acid nitrogen eliminated under normal conditions.

Frey[6] found from 0.2 to 0.5 gm. amino-acid nitrogen under normal conditions, Magnus Levy[7] from 2 to 6 per cent. of the total nitrogen, Henriquez[8] 2 per cent. of the total nitrogen on a mixed diet, Masuda,[9] in the case of low protein diet, from 1 to 3 per cent. of total nitrogen, and on high protein diet from 4 to 5 per cent. Joshida[7] found amino-acid nitrogen varying from 0.5 to 2 per cent., and Falk and Saxl[10] from 1.5 to 3 per cent., Siquorelli[11] found 2 per cent. of total nitrogen in normal cases on mixed diet. Galambos and Tausz[12] found from 0.236 to 1.05 gm. amino-acid nitrogen and 1.58 per cent. and 4.35 per cent. of total nitrogen.

It would appear from the evidence presented that amino-acids form an appreciable part of the normal nitrogenous elimination. If ninhydrin reacts with compounds containing the intact amino group in the α, β, etc., position to the intact carboxyl group, then all normal urine should react positively with the reagent, unless the urine contains interfering substances or the content of the amino-acids falls below the limits of delicacy of the reagent.

COLLECTION OF SAMPLES

The urine was obtained fresh and in nearly all cases about four hours after meal-time. The patients suffering from various pathologic conditions were on a liquid or light diet with the exception of the tabes and general paresis patients who were on a general diet. The pregnant women and the normal persons were on a general mixed diet.

METHOD

For the removal of the colloidal substances in the urine we used the aluminum cream according to the method of Marshall and Welker,[13] who showed that this substance can be used for the quantitative removal of colloids from their solutions. Ten c.c. of urine was mixed with an equal volume of aluminum hydroxid cream and the mixture was shaken and filtered. Ten c.c. of the filtrate was treated with 0.2 c.c. of a 1 per

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* From the Laboratories of Medical Research and Physiologic Chemistry, University of Illinois, College of Medicine.

* Owing to lack of space, this article has been abbreviated in The Journal by omission of several tables. The complete article is contained in the author's reprints.

[1] Warfield, Louis M.: Presence of Dialyzable Products Reacting to Abderhalden's Ninhydrin in the Urine of Pregnant Women, The Journal A. M. A., Feb. 7, 1914, p. 436.

[2] Pfaundler: Ztschr. f. physiol. Chem., 1900, xxx, 75.

[3] Krüger and Schmidt: Ztschr. f. physiol. Chem., 1900-1901, xxxi, 556.

[4] Embden: Verhandl. d. Cong. f. inn. Med., 1905, xx, 304.

[5] Embden and Reese: Beitr. z. Chem. Physiol. u. Path., Hofmeister's 1905-1906, vii, 411.

[6] Frey: Ztschr. f. klin. Med., 1911, lxxii, 383.

[7] Cited by Galambos and Tausz, Ztschr. f. klin. Med., 1911, lxxiii, 325.

[8] Henriquez: Ztschr. f. physiol. Chem., 1909, lx, 1.

[9] Masuda: Ztschr. f. exper. Path. u. Therap., 1911, viii, 629.

[10] Falk and Saxl: Ztschr. f. klin. Med., 1911, lxxiii, 325.

[11] Siquorelli: Biochem. Ztschr., 1912, xxxix, 36; 1912, xlvii, 482.

[12] Galambos and Tausz: Ztschr. f. klin. Med., 1913, lxxvii, 14.

[13] Marshall and Welker: Jour. Am. Chem. Soc., 1913, xxxv, 820.

cent. ninhydrin solution and heated on a Chaddock burner for exactly one minute after boiling had begun. The depth of color was observed and noted after the tubes had been standing for half an hour at room temperature. In all the samples containing albumin the filtrate from the aluminum treatment was tested by means of the heat coagulation or Heller's ring test, in order to be certain that sufficient aluminum hydroxid had been used to remove all the albumin. A summary of results is given in Table 1. A complete tabulation of the results will be incorporated in the protocols in the reprint of this paper.

EXPERIMENTS OF COMPARATIVE STRENGTH OF REACTION WITH THE FILTRATES FROM URINE, TREATED WITH ALUMINUM HYDROXID AND THE DIFFUSATES FROM PARCHMENT THIMBLES

A study was made of the comparative strengths of the color reactions with ninhydrin when the methods of diffusion through parchment thimbles and precipitation by aluminum hydroxid were used to remove the colloids. A number of urines which gave strongly positive reactions were compared. The diffusion was carried on in C. S. and S. 579 dialyzing thimbles, which had been previously tested to insure impermeability to albumin and equivalent permeability to non-colloidal substances.

Diffusion time was twenty-one hours at room temperature.

The depth of blue color brought out on boiling 10 c.c. with 2 c.c. of a 1 per cent. of ninhydrin solution was greater in diffusates than in the filtrates from aluminum hydroxid.

These results are shown in Table 2.

A comparative study was made of the strength of the ninhydrin reaction on the urines direct, on the filtrates after treatment with aluminum hydroxid and on the diffusates through collodion bags and parchment thimbles.

Ten urines were studied from cases of acute contagious diseases. The urines were obtained fresh and the reaction with ninhydrin on the urine direct and on the filtrate after treatment with aluminum hydroxid was studied at once. The diffusion through collodion bags and parchment thimbles was allowed to proceed eighteen hours and the diffusates tested with ninhydrin. The results are shown in Table 3.

Contrary to the conclusions of C. E. M. Fischer,[14] that the reaction might just as well be applied to any

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[14] Fischer: Ninhydrin Reaction of Urine, Correspondence Department, THE JOURNAL A. M. A., March 21, 1914, p. 950.

TABLE 1.—SUMMARY OF URINARY ANALYSES AND NINHYDRIN REACTIONS

Class	Whole No. Cases	Specific Gravity Average	Reaction		Albumin*		Indican*		Ninhydrin*	
			Nature of	No. Cases	Result of Test	No. Cases	Result of Test	No. Cases	Result of Test	No. Cases
Normal	8	1.0210	Acid Not tested	2 6	0	8	± 0	2 6	+++ ++ + —	4 1 2 1
Pregnant women	22	1.0261	Acid Faintly acid	20 2	+ ± 0	6 8 8	++ + ± 0 Not enough	2 4 8 7 1	+++++ ++++ +++ ++ + 0	5 2 8 3 1 3
Carcinomas	13	1.0176	Acid Faintly acid Alkaline	9 2 2	+++ + ± 0	1 1 6 5	++ + ± 0	1 5 4 3	+++++ ++++ +++? ++? +? 0	2 1 1 1 1 7
Burns	3	1.0196	Acid Alkaline	2 1	± 0	1 2	+ ±	2 1	+++ ++ +?	1 1 1
Frost-bite	2	1.0245	Acid	2	0	2	± 0	1 1	+++ ++?	1 1
Diabetes	5	1.0288	Acid Slightly alk.	4 1	+++ ± 0	1 1 3	+ 0	2 3	+++ +? ?	1 1 3
Tabes	21	1.0219	Acid Faintly acid Alkaline Faintly alk.	18 1 1 1	± ±? 0	2 1 18	++ + ± 0 Red Deep red	1 3 6 2 8 1	+++++ ++++ +++ ++ ++? 0	2 1 1 3 2 12
General paresis	2	1.0230	Acid	2	± 0	1 1	+	2	?	..
Tuberculosis	10	1.0235	Acid	10	+ ± 0	1 2 7	+ ± 0	3 6 1	+++? ?	6 4
Pneumonia	7	1.0157	Acid Alkaline	6 1	+++ ++ 0	1 1 5	++++ + ± 0	1 2 1 3	+++ +++? ++? +? 0	1 1 2 1 2
Contagious diseaces..	28	1.0185	Strong acid Acid Faint acid + Acid	5 20 2 1	+++ ++ ± ±— 0	2 2 2 1 21	++ + ± 0	2 5 5 16	+++++ ++++ +++ ++ ++? + +? 0	2 2 4 2 5 3 3 7
Miscellaneous	3	1.0196	Acid Alkaline	2 1	± 0	1 2	+ 0	1 2	0	3
Total number of Urines studied ...	124	.....	....	..	....	..	....	.	....	..

* In these columns ± means trace, ± —, faint trace, and ±?, very faint trace.
1. Probably due to ingested iodid.

albumin-free urine, we find that the reaction is much better brought out after treatment by aluminum hydroxid or dialysis.

CONCLUSIONS

1. The presence of non-colloidal ninhydrin-reacting substances in urine is of no value as a means of diagnosing pregnancy.

2. The reaction may be absent or inhibited in the urine of pregnant women as well as in normal and pathologic urine.

3. In the various urines treated the only difference in the ninhydrin reaction between the diffusates through parchment, and the filtrates from the aluminum treatment were those of intensity of colors, the aluminum filtrates showing a less intense color with ninhydrin.

TABLE 2.—COMPARATIVE STUDY OF THE NINHYDRIN REACTION ON THE DIFFUSATE OF URINE THROUGH PARCHMENT THIMBLES AND THE FILTRATE AFTER TREATMENT BY ALUMINUM HYDROXID CREAM

	Parchment		Aluminum Hydroxid	
	Urinary Pigment	Ninhydrin	Urinary Pigment	Ninhydrin
1	Strong	++?	0	++?
2	Faint	+++++	0	+++
3	Faint	+++	0	++?
4	Negative	+++	0	++
5	Negative	+	0	+
6	Faint trace	+++++	0	++++
7	Negative	++++	0	+
8	Strong	0	0	0
9	Faint	++	0	+

4. In the urines reacting positively with ninhydrin the removal of colloidal substances favors the production of the blue color given by this reagent with amino-acids. Such urines before diffusion or treatment with aluminum hydroxid give a color which is not so strong and has more of a reddish cast. This is not the result of the dilution alone.

TABLE 3.—COMPARATIVE STRENGTH OF REACTION WITH NINHYDRIN ON URINES DIRECT, ON THE FILTRATES AFTER TREATMENT WITH ALUMINUM HYDROXID CREAM AND THE DIFFUSATES THROUGH COLLODION BAGS AND PARCHMENT THIMBLES‡

No.	Urine Direct	Aluminum Hydroxid	Collodion Bags	Parchment Thimbles
1	*	0	0	0
2	Red† +++?	+?	Red† +++?	Red† +++?
3	0	++	+?	+?
4	*	+?	+?	++?
5	*	0	Red† ++?	+
6	0	0	+?	..
7	++++	+++	0	+
8	*	++++	Blue +++++	+++
9	Red† ++?	+?	++?	Red† ++?
10	0	0	0	0

* No test made because of insufficient quantity of urine.

† Red reaction here means that the typical violet of the ninhydrin was modified by a reddish cast.

‡ In these columns o means negative.

5. The occurrence of either albumin or indican appears to have no influence on the ninhydrin reaction applied to the colloidal-free urine.

We wish to express our appreciation to the attending and house staffs of the Cook County Hospital for access to the clinical material and assistance in obtaining histories in the various cases.

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THE VIABILITY OF THE SPIROCHAETA PALLIDA IN DIFFUSE LIGHT AT ROOM TEMPERATURE*

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In connection with our work on the *Spirochaeta pallida* it occurred to us that it would be of much hygienic interest to determine how long the spirochete would survive, in diffuse light and at room temperature, under conditions simulating roughly those prevailing when syphilitic discharges are deposited as drops of fluid on hard surfaces, soaked in a cloth, a towel for instance, or dried on glass, as would occur in their deposit on drinking cups, etc.

In order to simulate as nearly as possible the conditions prevailing in discharges, we carried out this experiment with fluid cultures which were contaminated both with cocci and with bacilli in which very large numbers of spirochetes were present. The culture used was one that had been planted in a flask of mixed ascitic fluid and salt solution fourteen days before. This fluid contained rather more spirochetes per drop than we have seen, except in the most profusely positive primary and secondary lesions. In its composition of about half and half ascitic fluid and salt solution it was closely similar to exudates from the body.

The following experiments were made:

Experiment 1.—A series of twelve test-tubes, 20 cm. long, as used in the cultivation of the *Spirochaeta pallida* by Noguchi's method, were sterilized and, into the bottom of each were placed about 3 drops of the mixed culture. These tubes were then exposed, on the middle of a high table in a light laboratory room with southern exposure, in bright diffuse light. The temperature of this room ranged from 22 C. (71.6 F.) at the beginning of the experiment (April 27) to 25 C. (77 F.) at 6 p. m. and 21.5 C. (70.7 F.) at 10 p. m. At the end of varying periods, as indicated in Table 1, a bit of sterile kidney-tissue was placed into each tube, this covered with a mixture of neutral agar and ascitic fluid, the column then sealed with oil and the tube incubated. At the end of thirteen days, dark-field examinations were made and profuse growth found in the tubes marked "positive." The results of the experiment are found in Table 1.

TABLE 1.—RESULTS OF EXPERIMENT 1

Tube No.	Planted after Hours	Result Determined after 13 Days*
1	Immediately	+
2	½	+
3	1	+
4	2	+
5	3	+
6	4	+
7	5	+
8	6	+
9	7	+
10	11½	+
11	23½	—
12	31	—

* In this and the following tables + means positive and — negative.

Experiment 2.—In this experiment similar tubes were set up, but the material placed into them consisted of little bits of towel-cloth which had been dipped into the spirochete culture. An ordinary laboratory towel was cut into small squares, sterilized in a dry oven, and these little pieces dipped into the fluid culture until thoroughly soaked. The excess fluid was then shaken off but the cloth not thoroughly dried. Its condition was one of distinct moistness, though not dripping, when placed into the tube. The exposure was carried on just as before, the little bits of towel remaining during the period of exposure in the bottom of the test-tubes. Plants were made as in the previous experiment. The results are shown in Table 2.

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TABLE 2.—RESULTS OF EXPERIMENT 2

Tube No.	Planted after Hours	Result Determined after 13 Days
1	Immediately	+
2	½	+
3	1	+
4	2	+
5	3¼	+
6	4½	+
7	5½	+
8	6½	+
9	11½	+

EXPERIMENT 3.—In this experiment the culture material was allowed to dry on pieces of broken cover-slips. The sterile cover-slips were dipped into the culture and placed in a Petri dish into the incubator. The first tube was planted immediately, while the slips were still moist. After one hour in the incubator the second slip was planted and close observation showed that this was not yet entirely dry—a slight film of moisture still appeared on it. Before the third planting was made the slips were removed from the incubator and dried in the air. Subsequent plants were made with absolutely dry material.

TABLE 3.—RESULTS OF EXPERIMENT 3

Tube No.	Planted after Hours	Result Determined after 13 Days
1	Immediately	+
2	1	+
3	1¼	—
4	2⅓	—
5	3½	—
6	4½	—
7	5½	—
8	10½	—

These simple experiments show that, when kept moist, the *Spirochaeta pallida* can live in diffuse light and at room temperature, under conditions of mixed culture (as occurring in the ordinary contamination of materials from the patient) as long as eleven and one-half hours. From the third experiment it appears that drying kills the organism rapidly. During the period of drying, however, for as long as one hour, the spirochete may remain alive.

We are quite aware that the artificial conditions produced by us do not exactly simulate those prevailing when the material is deposited freshly from the patient on articles freely exposed to the air and not enclosed in test-tubes. As far as the first consideration is concerned, it would seem that organisms deposited fresh from the patient might be even more thoroughly protected than those employed by us, in that they are often contained in mucous discharges which dry but slowly. Such material on a towel hanging in an ordinary privy or bath-room in which there is apt to be a great deal of humidity, may remain moist for a considerable period, although probably not so long as did the pieces of towel enclosed in our test-tubes. As far as the light conditions are concerned, these were probably more severe in our experiments than they would be in the ordinary dark corner in which are located the places where such contamination might take place.

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Primitive Ideas.—The heart, according to Aristotle, was the seat of the soul, and the birthplace of the passions, for it held the natural fire, and in it centered movement, sensation and nourishment.—Elliott, Greek and Roman Medicine.

THE PRACTICAL SIGNIFICANCE OF THE ADRENALS *

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Although the last word in regard to the functions of the adrenals has by no means been said, enough evidence has accumulated to justify certain conclusions which will probably stand the test for further research.

Perhaps the most significant discovery of recent years is that epinephrin has the remarkable characteristic of going through the body and selectively stimulating the sympathetic nervous system, or, more specifically the terminal "receptive substance" which forms a functional connection between the sympathetic nerve-endings and the tissues.[1] The effect of the drug in any organ depends on whether or not it has a sympathetic innervation. If not, no effect occurs. If sympathetic fibers are present, the effect is stimulation or depression, depending on the function normally mediated by these fibers. Considering that the sympathetic system has a regulatory influence on many vital processes, the body is peculiarly exposed to the influence of the adrenal secretion. Moreover, this secretion acts strongly in remarkably dilute solution. For instance, the presence of 1 gm. in 100,000 liters, or 1 grain in 1,500 gallons of fluid bathing a piece of isolated intestine is sufficient to check its activity.[2] This being true, the adrenals are potentially a very important factor in regulating bodily activity. It thus becomes a very practical question as to when and under what conditions this highly potent substance is discharged into the blood-stream. If this occurs to any considerable extent, the adrenals must be regarded as an important factor in the normal physiologic functioning of the body as well as in nearly every symptom-complex.

The conditions governing adrenal discharge have been under investigation for the last three years in Cannon's laboratory at the Harvard Medical School.[3] Cannon, in studying the activities of the alimentary tract, had noticed that an outburst of emotion — fear or anger — resulted in a checking of peristalsis which persisted some time after all evidence of the emotion had passed. He suspected that this might be due to the presence in the blood of epinephrin secreted as a result of the emotion. Direct research confirmed the fact that augmented adrenal discharge does occur as a result of strong emotion. If emotion causes such an effect, pain, the most common cause of emotion, might be expected also to cause adrenal discharge. This was found to be the case. Asphyxia has been shown by several investigators to be equally effective.

Since this adrenal discharge is purely reflex, and since reflexes are usually of direct benefit to the individual, the question arises, Of what use is this arrangement? McDougal has suggested that emotions are the mental representation of bodily activities: anger represents combat, fear represents flight. In case combat results, pain is at once experienced. Either flight or combat causes partial asphyxia — at least until the body has had time to adjust to the conditions. The adrenal discharge might be supposed, therefore, to aid in some way in strenuous muscular activity; that is, to integrate the body for muscular response to the stressful condition which caused the discharge.

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* Read before the Illinois State Medical Society, Decatur, 1914.

[1] Elliott: Jour. Physiol., 1905, xxxii, 401.

[2] Hoskins: Am. Jour. Physiol., 1912, xxix, 363.

[3] For an excellent summary of the research see Cannon: Am. Jour. Physiol., 1914, xxxiii, 356.

As a matter of fact, the injection of epinephrin does have a number of effects that aid in violent muscular activity. A quiescence of the whole digestive system results and the blood is shifted from the splanchnic circulation to the active muscles, the nervous and respiratory organs. The circulation in these organs is further increased by a rise of blood-pressure resulting from vasoconstriction of the splanchnic area and often of the skin, as well as by augmented cardiac discharge. A discharge of dextrose occurs, leading to hyperglycemia, whereby the laboring muscles supposedly obtain a better supply of energy material. This hyperglycemia has been observed as a direct result of strong emotion as well as of artificially augmented epinephrin. The well-known bronchodilator effect of epinephrin is of obvious utility in aiding free breathing whereby the oxygen necessary to violent activity is secured. Most striking of all, however, the laboring muscle itself is directly benefited. Cannon and Nice[4] observed that after the injection of epinephrin or stimulation of the splanchnic nerves to cause adrenal discharge, the efficiency of a fatigued muscle is improved, sometimes 100 per cent. Gruber[5] has found that recovery from fatigue is greatly hastened by the injection of epinephrin. The explanation of this fact is not definitely known, but a hint is offered by Evans and Ogawa's[6] observation that in the heart at least the assimilation of oxygen is increased by epinephrin. Cannon, Gray and Mendenhall[7] have discovered another remarkable fact which is of further use to the individual in case the stressful condition results in bodily injury: epinephrin lessens the coagulation time of the blood. This is true, however, only within physiologic limits for such quantities as can be obtained by stimulating the splanchnic nerves. In case greater quantities are employed, the coagulation is interfered with. With proper regard to this fact, epinephrin should come into frequent clinical use in combating hemorrhage. Cannon suggests that the pains of labor are of direct use to the mother in causing adrenal discharge and thereby protecting her from post-partum hemorrhage.

Some of these facts are of direct clinical importance. The emotional instability of the neurasthenic and continual worry or fear in the normal person probably subject them to frequent adrenal stimulation to the detriment of their vegetative activities, particularly of digestion. The dangerous influence of emotional stress in persons with high blood-pressure or hard arteries is to be ascribed partly to an adrenal factor. Similarly a diabetic is to be protected from conditions causing adrenal discharge because of the tendency of epinephrin to aggravate hyperglycemia.

The fact that injecting epinephrin is exactly equivalent to a general stimulation of the sympathetic system and the common supposition that an animal after removal of its adrenals dies in a condition of vasomotor failure, at least strongly suggest that the paramount function of these glands is to maintain tonus in the sympathetic system. This hypothesis may be designated the "tonus theory." It supposes that the adrenals constantly pour into the blood-stream epinephrin in sufficient amount to keep the sympathetic system in a condition of partial stimulation.

A number of facts may be mentioned, however, which are not consistent with the theory. In the first place, the adrenal glands seem to have at best but a very limited capacity.[8] The doses of the drug that are given in pharmacologic demonstrations are probably greatly out of proportion to any amount which the glands can secrete. If small quantities of the drug are given, the most prominent effect is a vascular depression.[9] If during periods of quiet existence the glands have any effect, it is likely that it is a depression of the sympathetic system.

We have excellent reason, however, to think that ordinarily the sympathetic system is not at all under epinephrin influence. It is easy to place ligatures in such a way that they can be drawn tight from outside the body and shut off the adrenal circulation without affecting any other important structures. While a blood-pressure record is being taken on an animal so prepared, the adrenals can be isolated quickly. Whatever influence they may have been having is immediately removed. If they have been keeping up sympathetic tonus, a fall of blood-pressure should immediately occur; but the effect of so isolating the glands is nil.[10]

Another fact may be mentioned: If epinephrin be injected at a very small but gradually increasing rate, no effect at all is at first to be seen. Then various changes occur. One of the earliest is a depression of peristalsis. This is noted before any tonic influence on the circulation appears.[11] It is obvious that any mechanism which could keep up sympathetic tonus only at the expense of intestinal paralysis would be of little use. This fact, as suggested by O'Connor, has an important clinical bearing. There have been numerous attempts to incriminate the adrenals in cases of high blood-pressure; but any degree of epinephrin secretion sufficient to cause continual hypertension is out of the question and the explanation, whatever it be, is to be sought elsewhere. This conclusion is strengthened by the observation that epinephrin glycosuria is also produced before the blood-pressure is raised.[12]

Attractive as the tonus theory is, such data render it no longer tenable. But the fact remains that adrenal extirpation is fatal and the final symptoms are supposed to include a primary failure of functions under sympathetic control, notably of blood-pressure. Elliott[13] has offered the suggestion that adrenal deficiency results in the loss, not necessarily, of any tonic stimulant, but of a substance necessary for the maintenance of sympathetic irritability; that is, that epinephrin is of importance in the transmission of impulses through the myoneural "receptive substance." There is nothing in the available evidence which disproves the suggestion.

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4. Cannon and Nice: Am. Jour. Physiol., 1913, xxxii, 44.
5. Gruber: Am. Jour. Physiol., 1914, xxxiii, 335; ibid., xxxiv, 89.
6. Evans and Ogawa: Jour. Physiol., 1914, xlvii, 446.
7. Cannon and Mendenhall: Am. Jour. Physiol., 1914, pp. 225, 243, 251. Cannon and Gray: Jour. Physiol., 1914, p. 232.
8. Hoskins, R. G., and McPeek, Clayton: The Effects of Adrenal Massage on Blood-Pressure, The Journal A. M. A., June 7, 1913, p. 1778. Osgood, cited by Cannon: Am. Jour. Physiol., 1914, xxxiii, 356.
9. Moore and Purinton: Arch. f. d. ges. Physiol., 1900, lxxxi, 483. *Hoskins, R. G., and McClure, C. W.: The Adrenal Glands and Blood-*Pressure, Arch. Int. Med., Oct., 1912, p. 353. Cannon and Lyman: Am. Jour. Physiol., 1913, xxxi, 376.
10. Kahn: Arch. f. d. ges. Physiol., 1911, cxl, 216. Hoskins and McClure: Am. Jour. Physiol., 1912, xxx, 192. Trendelenburg: Ztschr. f. Biol., 1914, lxiii, 155.
11. Hoskins and McClure: Am. Jour. Physiol., 1912, xxxi, 59.
12. Gramenitzki: Biochem. Ztschr., 1912, xlvi, 186.
13. Elliott: Jour. Physiol., 1904, xxxi, p. xx.

Another hypothesis equally capable of explaining the results of adrenal extirpation has been made, namely, that the adrenals in some way directly promote the metabolism of the muscular tissues.[14] In the absence of the glands, myasthenia develops. This asthenia, if it included the circulatory apparatus, would lead to low blood-pressure. The negative phase of the hypothesis is equally tenable, that is, that the adrenals destroy some substance which interferes with muscular metabolism. In this form the suggestion is an old one.

Elliott's suggestion is amenable to experimental investigation. If adrenal destruction results in an interference with sympathetic functioning, the fact should be easily demonstrable. Accordingly, a series of experiments has recently been carried out in our laboratory at Northwestern in the hope of determining the matter.[15] We used the vasomotor system as a criterion of the condition of the sympathetic system as a whole. The method, in brief, was to isolate the adrenal glands and then, after the animal began to react to adrenal deficiency, to test the functional condition of various parts of the vasomotor apparatus. The injection of pituitary extract, which acts on the vascular musculature itself, showed that this tissue was not impaired. Similarly epinephrin showed that the myoneural receptive substance reacted normally. The condition of the sympathetic cells proper was determined by injecting nicotin, which selectively stimulates these. At a time when the animal was almost moribund, the reaction to nicotin was not only unimpaired, but often even somewhat augmented. Finally, stimulation of afferent nerves produced an undiminished pressor effect. It was concluded, therefore, that the vasomotor system as such is not influenced by adrenal destruction. Parenthetically, attention may be called at this point to a fallacy in the clinical use of epinephrin as a test of *sympathicotonie* in exophthalmic goiter and other conditions. Epinephrin has little or no influence on the sympathetic system proper. Its action is restricted to peripheral structures, that is, to the "receptive substance." An exaggerated reaction to epinephrin does not at all indicate, as is popularly supposed sympathetic irritability. Indeed, as Elliott has shown, it is a characteristic sign of sympathetic degeneration. We have had numerous opportunities to observe that there is no necessary parallelism between true sympathetic irritability and augmented reaction to epinephrin. The use of epinephrin in this connection, therefore, is absurd. Nicotin would be a much more logical agent.

In connection with the experiments just mentioned we were able to confirm the observation that low blood-pressure does result from destruction of the adrenals, but that there develops a marked weakness of the heart which is alone enough to account for the hypotension. Experimental adrenal deficiency, therefore, is seen to involve selectively the cross-striated muscle, cardiac as well as skeletal. The same is probably true of Addison's disease.

In view of the fact that the adrenals consist of two distinct parts the question arises, Which of these is concerned in such experiments? The results of adrenal deficiency are commonly ascribed to loss of the medullary portion from which epinephrin is secreted. Without attempting any exhaustive discussion of the question, some of the more pertinent evidence may be mentioned. If *epinephrin deficiency* were the significant factor it could easily be compensated for by the continuous injection of the drug; but observers are agreed that this procedure is futile.[16] Death at best is but slightly delayed. Biedl[17] has concluded from extirpation experiments in animals in which the two parts of the gland are separate that it is the loss of cortical substance which causes asthenia. Various observers have seen animals kept alive after adrenal extirpation by the hypertrophy of fragments left behind in the operation; but in such cases it is the cortical tissue that hypertrophies.[17] Moreover, as Loewy[18] has recently reported, the characteristic syndrome of Addison's disease may develop in patients in whom the cortical tissue alone is deficient. Weed[19] of Johns Hopkins has recently reported a crucial experiment on the point. By successive operations an animal was deprived of all its adrenal tissue except one small fragment. Ligatures were then so placed that the circulation of the cortical part was destroyed, but the medullary part left unaltered. The animal promptly died.

On the whole, it seems most likely that the characteristic asthenia of adrenal deficiency is due to the loss of cortical tissue, whereas the medullary part has as its chief function the furnishing of a special stimulant to enable the body to cope with emergencies.

In summary we may say that the available evidence indicates that the adrenals secrete a substance, epinephrin, of remarkable potency. This substance selectively affects the tissues having sympathetic nervous control, thereby affecting many vital functions. Adrenal discharge occurs when the individual is subject to stress, as strong emotions, pain or asphyxia. The discharge integrates the body for muscular response: (*a*) by shifting the blood from the vegetative to the motor, nervous and respiratory organs; (*b*) by increasing blood-pressure; (*c*) by causing discharge of dextrose into the blood for use of the laboring muscles; (*d*) by dilating the bronchioles, permitting freer breathing, and (*e*) by reducing fatigue. It also hastens the coagulation time of the blood; *a*, *b* and *c* are of direct clinical importance.

During quiet existence the epinephrin secretion, if occurring at all, is below the threshold necessary to stimulate the sympathetic system. Sympathetic activity *per se* is not impaired by adrenal extirpation.

Adrenal destruction results in fatal asthenia of the skeletal and cardiac muscle. This is probably due to loss of adrenal cortex, not epinephrin-secreting tissue. Addison's disease is probably due, therefore, to functional failure of the adrenal cortex.

2431 South Dearborn Street.

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15. Hoskins and Wheelon: Am. Jour. Physiol., 1914, xxxiv, 172.
14. Oliver and Schafer: Jour. Physiol., 1895, xviii, 230. Hoskins and McClure: Am. Jour. Physiol., 1912, xxx, 195.
16. Battelli: Compt. rend. Soc. de biol., 1902, p. 1138. Gradinescu: Arch. f. d. ges. Physiol., 1913, clii, 203.
17. Biedl: Innere Sekretion, Berlin, 1913.
18. Loewy: Deutsch. Arch. f. klin. Med., 1913, cx, 373.
19. Weed: Verbal Communication before the American Society for Experimental Pathology, Dec. 30, 1913.

Qualities of a Surgeon.—Celsus, who lived during the reign of Augustus, described the qualities which should distinguish a surgeon as follows: He should not be old, his hand should be firm and steady, and he should be able to use his left hand equally with his right; his sight should be clear, and his mind calm and courageous, so that he need not hurry during an operation and cut less than required.

PRACTICAL STUDY OF GOAT'S MILK IN INFANT FEEDING AS COMPARED TO COW'S MILK[*]

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AND
HARRY R. LOHNES, M.D.
BUFFALO

This study was made to learn, if possible, why goat's milk agrees better with some infants than cow's milk. The babies were selected at random from the inmates of St. Mary's Infant Asylum and Maternity Hospital. The goat's milk averaged from 0.5 to 1.5 per cent. richer in fats than the cow's milk used in this institution. Nevertheless, in making our modifications of the two milks the same amount of each milk was used in the stock formulas. Consequently the caloric value of the goat's milk modifications was greater than that of the cow's milk.

We shall present our data under various headings.

RESULTS OF GASTRIC ANALYSES

All test-meals were withdrawn one hour from the middle of the feeding. The amount recovered averaged, in fourteen cases, nearly twice as much of cow's milk formulas as goat's milk, the accurate ratio being 41:27 c.c. This points to the slower digestion of cow's milk.

The curds of the goat's milk formulas were smaller and more flocculent, corresponding to the appearance in test-tube digestion.

The analyses in fifteen cases with goat's milk, and in fourteen cases, in the same children, with cow's milk, gave the averages shown in Table 1.

TABLE 1.—AVERAGES OF ANALYSES WITH GOAT'S MILK AND COW'S MILK

	Goat's Milk	Cow's Milk
Free hydrochloric acid	Once	None
Combined hydrochloric acid	22.00	28.20
Acid salts	5.53	5.30
Total acidity	28.4	33.50

In a previous paper[1] we calculated the average gastric analysis on (*a*) barley-water and (*b*) proprietary foods containing some proteins, fat, sugar and carbohydrates, but no milk. For convenience of comparison, we give in Table 2 the averages of these and also of modified goat's and cow's milk, as shown in Table 1. This table indicates the greater stimulating effect on the stomach of cow's milk than goat's milk, the greater stimulating effect of both than of the proprietary foods made without milk, and finally the greater stimulating effect of all three than of barley-water.

In some vomiting cases Table 2 gives definite information as to the causal factor of this condition in these four kinds of foods (*a*) through direct gastric stimulation, (*b*) because of the size and density of curds and (*c*) because of slower digestion.

TABLE 2.—COMPARISON OF ANALYSES

	Free Hydrochloric Acid	Combined Hydrochloric Acid	Acid Salts	Total Acidity
Barley water	2.10	5.60	....	9.00
Proprietary foods containing some proteins, fat, sugar and carbohydrates, but no milk	None	10.50	....	17.40
Goat's milk with rice water and 2 per cent. cane-sugar solution	None	22.00	5.53	28.40
Cow's milk with similar and other modifications	None	28.20	5.30	33.50

CLINICAL OBSERVATIONS

As regards absorption and gain in weight our statistics are indefinite for three reasons: First, the babies being institution babies were apt to gain slowly; second, owing to an epidemic of streptococcus infection, which had swept through the infant's ward, causing gastro-intestinal disturbances so serious that about one-fifth of the babies died, the digestion of those who did recover, was more or less impaired; and third, because a certain number, who were doing well, were removed from the institution through adoption before our experiments were finished.

Of the number tested, sixteen cases in all, on similar formulas, twelve gained more rapidly on cow's milk modifications, and four on goat's milk. The gain of the former group was in the ratio of 3:1. The gain of the latter group was in the ratio of 9:1. Consequently those who did gain on goat's milk gained more rapidly than on cow's milk, but fewer gained on goat's milk.

In infantile atrophy and inanition, three cases, goat's milk was no more suitable than any other food.

Taste of Goat's Milk.—At first the babies did not finish all their bottles, not liking the flavor of the food as well as of cow's milk. This surprised us, because there seemed to us to be no unusual taste, as is usually supposed to be the case. If the milk is clean, we think the strong taste so common in Switzerland is unnecessary, and believe that the taste, as well as odor, is due to lack of udder cleanliness or possibly the type or food of the goat. In the goat's milk taken from three sources in this state — Geneva, East Aurora and Buffalo — we have never found the strong taste or odor commonly supposed to be characteristic of goat's milk.

Fats.—In goat's milk the fat averaged from 0.5 to 1.5 per cent. higher than in cow's milk. The more thorough emulsification of the fat in goat's milk, possibly the finer fat globules, prevents the separation of the cream on standing, as occurs in cow's milk. This fact may be an element in reducing the tendency to regurgitation in goat's milk as compared to cow's milk, and further, may be a very important factor in lessening the liability to sour vomiting, due to fatty acid fermentation, so common in high fat mixtures of cow's milk.

Strength of Formulas.—The babies, as a whole, tolerated equally well similar amounts of goat's or cow's milk with the same diluents, but as the goat's milk contained higher fat than cow's milk, they actually received more fat per feeding, and hence higher caloric value. It is consequently strange that more babies gained, as stated above, on cow's milk than on goat's milk modifications.

In our formulas, fat rarely averaged over 2.25 per cent. in goat's milk, and was a little less than 2 per cent. in cow's milk.

Stools.—On goat's milk the stools were as a rule smaller and of a more vivid yellow.

Age.—This did not influence materially the ratio of gain on goat's versus cow's milk, but the younger the baby, the more the evidence pointed toward a greater gain on goat's milk.

Vomiting.—Of twenty-four children receiving both goat's and cow's milk formulas, five vomited goat's milk some, and none cow's milk. The explanation may be the slightly lower fat percentage in the cow's milk formulas. On the other hand, in certain cases goat's milk is often tolerated in similar amounts because of the fact that there is less gastric stimulation, that is, smaller, lighter curds.

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[*] Read before the Pediatric Section of the New York State Medical Society at Rochester, April, 1913.

[1] Sherman, DeWitt H.: Gastric Analysis in Infants, The Journal A. M. A., May 7, 1910, p. 1514.

After getting accustomed to goat's milk more children seemed hungry, and cried more at night than when taking cow's milk.

The type of modification commonest used was similar amounts of goat's milk or cow's milk diluted with rice-water and 2 per cent. cane-sugar.

We are very much indebted to Dr. W. H. Jordan, director of the New York State Agricultural Experiment Station, for sending us for six weeks 16 quarts a day of goat's milk in the best of condition. We are also indebted to Sister Frances and Sister Clare at St. Mary's Infant Asylum and Maternity Hospital for their assistance and cooperation in our work.

680 West Ferry Street—2378 Main Street.

THE HEMAUROCHROME REACTION

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WITH
SELMA GRANAT AND SARA DUPONT
NEW YORK

In June, 1913, T. G. Davis[1] of Los Angeles called attention to a substance which he called "hemaurochrome,"[2] which he found present in the urine in certain diseases. This he concluded was derived from hematin and occurred as a result of blood destruction in such diseases as carcinoma and sarcoma, in a series of cases of which he never failed to find the reaction. He also found it in malaria, anemias due to intestinal parasites, essential anemia due to near malignant disease of the lymph-glands and ductless glands, especially in hyperthyroidism in splenic, myelogenous and pernicious anemias.

In the cases here tabulated the reactions were divided into (1) negative, (2) faint (pinkish color), (3) moderate and (4) marked reaction. As the real hemaurochrome gives a rather deep pink, only the moderate and marked reactions are considered as positive.

During the past eight months the urine of about 350 cases of all sorts from the medical and surgical services of the Presbyterian Hospital, New York, have been tested for this reaction and the results are here tabulated.

The greatest interest at first naturally centered about the cases of new growth of all kinds, as it was hoped that a valuable method of differential diagnosis between malignant and benign tumors might be proved, Davis having reported such favorable results. There were seventeen cases of carcinoma and two of sarcoma; of the nineteen cases, ten were proved malignant by necropsy or operation, and in nine the diagnosis was practically certain from the clinical findings. Of these nineteen cases, in four, of the malignancy of which there was absolute certainty, the reaction was missing or inconclusive. Four cases of those clinically malignant also failed to show the reaction. Six of the certainly malignant cases gave positive reactions and five of those clinically malignant did also. To put it in another way, four positively malignant and four probably malignant cases failed to give the reaction, and six positively malignant and five probably malignant cases gave the reaction.

The only reasonable conclusion one can reach in regard to these cases showing a new growth is that if the reaction is moderately or strongly positive, malignancy can be suspected. Negative findings, however, do not by any means rule out the diagnosis, so that the usefulness of this test is decidedly limited and Davis' contention is not borne out.

Of the three cases of malaria, two showed a marked reaction, and it seems likely that this would be regularly so. Of the anemias, three cases of splenic anemia failed to show a reaction. In two cases of pernicious anemia, one failed, and the other gave a marked reaction. Of the simple and secondary anemias, the percentage of hemoglobin seemed to have little influence on the presence or absence of the reaction; the complicating conditions apparently determined it. In classifying the cases by diagnosis, however, we were struck with the frequency with which we met a positive reaction in gastro-intestinal ulceration, particularly in cases diagnosed as peptic ulcer, whether gastric or duodenal. Of these there were fifteen cases of fair certainty, most of them proved by operation, necropsy or a typical history with hemorrhage. Of these, three gave no reaction (one was made one month after the operation) while twelve gave good reactions. Two of these cases gave the reaction during the early part of the series when we were chiefly concerned with the diagnosis of cancer, operations, however, proving them both simple ulcerations (in one, sections were cut from the excised ulcer). In five cases diagnosed as simple hyperchlorhydria without discoverable lesion, two cases gave a good reaction, and the subsequent history of both makes it most probable that they were really cases of ulcer.

It was hoped that in this large percentage of positive reactions in ulcer cases we might have found a helpful diagnostic point in the often difficult task of differentiating ulcer from chronic appendicitis or gall-bladder disease. There were six cases of chronic appendicitis examined, two of which gave positive reactions; both these cases were unproved; both patients complained of epigastric pain and were in the doubtful class.

Four cases of gall-bladder disease were examined, all failing to show a reaction, so that the presence of a good reaction in these doubtful cases is at least highly suggestive of ulcer.

One investigator thought that the presence of considerable amounts of indican in the urine accounted for many reactions, but in this series this was distinctly not the case, as of the fourteen cases that gave a marked reaction for indican, none showed a positive hemaurochrome. The presence of indolacetic acid had no influence on the reaction. There were twenty-four normal cases examined, none of them giving a reaction. There were numerous surprises in the following cases, however, in that some cases gave reactions entirely unexpectedly, none of them belonging to any of the classes in which Davis had found reactions:

Nervous dyspepsia, 2 positive. Both cases suspicious of ulcer, not proved.

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[1] Davis, T. G.: Am. Jour. Med. Sc., June, 1913, p. 857.

[2] Hemaurochrome test: To 100 c.c. of urine add 10 c.c. hydrochloric acid. Heat slowly until it boils, remove and when cool add 30 c.c. ether. Agitate carefully. After twelve hours pour ether into white porcelain dish and evaporate. If the reaction is positive there is a deep pink color left in the dish.

Chronic cardiac decompensation, 21 negative, 3 positive.
Jaundice, 1 positive.
Gastroptosis, 1 positive.
Atonic constipation, 4 negative.
Intestinal fistula, 3 negative.
Typhoid fever, 9 negative, 4 positive (day of disease not a factor).
Arthritis deformans, 2 positive.
Diabetes mellitus, 5 negative, 2 positive.
Cerebral hemorrhage, 1 positive.
Hematuria, 1 positive.
Gonorrheal arthritis, 1 positive.
Aneurysm of arch, 1 positive.
Syphilis (or Wassermann), 19 negative, 4 positive.
Bronchitis, 10 negative, 1 positive (probably also malarial).
Pneumonia, 8 negative, 1 positive.
Neuritis, 1 negative, 3 positive.
Periostitis, 1 positive.
Dementia paralytica, 1 negative, 1 positive.
Chronic nephritis, 9 negative, 3 positive.
Septicemia, 1 positive.
Myositis, 1 negative, 2 positive.
Not diagnosed, 3 negative, 4 positive.
Esophageal stenosis, 1 negative, 1 positive.
Chlorosis, 16 negative, 15 positive.

One or more cases in the following conditions were examined, none of them showing a reaction: pleurisy, exophthalmic goiter, fatty liver, enterocolitis, acute poliomyelitis, vomiting of pregnancy, polycythemia, secondary anemia, ulcer of the leg, lipoma, enteroptosis, endometritis, uterine fibroids, acute appendicitis, acute parenchymatous nephritis, acute articular rheumatism, neurasthenia, acute leukemia, general arteriosclerosis, constipation, gastritis, tuberculosis, pyelitis, hydronephrosis, cholelithiasis, hysteria, scarlet fever and senility.

In reviewing these findings it will be seen that this reaction of hemaurochrome in the urine is far too frequently found in a wide variety of diseases to be of any specific importance. Indeed, one hesitates to attach any real importance to its presence in a case of suspected cancer or of gastric ulcer when we should like certain help in diagnosis, for the cases may be free of these diseases but still give positive reactions from some other and apparently trifling cause.

It may be said, however, that at least 50 per cent. of cancer cases give a positive reaction as well as a preponderating number of cases of peptic ulcer. In the latter condition especially it would seem worth while making the test in a very large number of cases, that sufficient operative or necropsy data might be obtained to establish its actual incidence. At present all one can say is that a positive reaction in cases presenting symptoms of peptic ulcer makes that diagnosis probable, particularly in contradistinction to a possible gall-bladder irritation or chronic appendicitis, and it may prove to be a test of greater negative than positive value.

66 West Fifty-Fifth Street.

The Speed of Progress.—Primitive views still prevail everywhere of man's relation to the world and to the uncharted region about him. So recent is the control of the forces of nature that even in the most civilized countries man has not yet adjusted himself to the new conditions, and stands, only half awake, rubbing his eyes, outside of Eden. Still in the thaumaturgic state of mental development, 99 per cent. of our fellow creatures, when in trouble, sorrow or sickness trust to charms, incantations and to the saints. —Osler: Specialism in the General Hospital.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLE HAS BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. ITS ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

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Electrargol is an odorless, tasteless liquid, appearing transparent and reddish brown by transmitted light and opaque and gray by reflected light. The addition of potassium cyanide solution or of strong nitric acid yields a colorless transparent solution. The nitric acid solution yields a white turbidity on the addition of chlorids.

Therapeutics

SOME OVERLOOKED CAUSES OF CHRONIC ILLNESS

(Concluded from page 1725)

EYE-STRAIN

In spite of frequent reference to this subject, only a small proportion of physicians consider it important, though it is generally recognized that headaches are frequently due to eye-strain. About 90 per cent. of all recurrent headaches are due to conditions in the eyes. Of course, only a certain proportion of such headaches will be cured by correcting the optical defects; in fact, some patients will have eye aches in spite of corrective glasses. There may be congenital or acquired muscle weaknesses that are impossible to cure; that is, an eye that will meet one test at one time will give an entirely different test on other days. Such patients are the greatest chronic sufferers that we have; they are always subject to actual headache or disturbing reflexes, and still they do not die from it.

As just stated, actual headaches, especially frontal or in the eyes, are recognized by most physicians as due to eye defects, and such patients are sent to oculists. It is not recognized, however, that some patients who have no headache still may have reflexes from eye-strain. These reflexes are largely gastric, and vary from flatulence, hyperacidity and delayed digestion to dizziness, nausea and vomiting. These patients may have cold hands and feet, shiverings, feelings of faintness and often have palpitation attacks and irregular hearts. They may even have cardiac pains.

There are patients who have been treated for neurasthenia for months, or even years; patients who have had their stomachs washed out daily for a time, or weekly for a longer time for supposed stomach trouble; patients who have been treated for heart-disease, for hyperacidity, for gastric ulcer, for intestinal indigestion, etc., who have been cured by the proper glasses; if there is any astigmatism, keeping the glasses straight is especially important.

The following items are essential to the best results in cases of eye-strain:

1. The oculist must carefully test each eye and decide with care on the glasses needed.
2. The best optician possible should be selected to fill the prescription, and he should give careful attention to the kind of frame, the length of the posts and the closeness to the eye at which the glasses should sit, etc. In fact, the adjustment is all-important.
3. The patient should return to the oculist to ascertain if the glasses are correct and correctly adjusted.

The oculist is no more infallible than are the rest of us, and we should urge a patient to continue with one oculist until it is proved that he does not succeed in correcting the defect in the patient's eyes. Then the patient with defective eyes has a right to seek consultation just as if the disturbance were in any other part of the patient's anatomy. Also, it must be impressed on an astigmatic patient that a correct glass must always be in the proper position; the moment that that glass is deflected, it does not cure the ocular error. Consequently, frequent adjustment by the optician should be advised and urged. Also, the patient should understand that his eyes will change, and consequently the glasses will need to be changed, the length of time varying from six months to several years.

In making a careful examination of a patient who comes for varying conditions (and it is astonishing how many of these patients will come saying they have heart-trouble or stomach-trouble, and the whole emphasis is put on some other part of the body than the eyes) we should first exclude as well as we can every possible organic condition that could cause the disturbances present. The examination of the urine should never be forgotten. Specific questions aiming toward the elaboration of the part the eyes play in the disturbances are as follows:

1. Is there headache?
2. Is there nausea, and what is the relationship of the nausea or vomiting to the headache? Does the headache always precede the vomiting? We shall find that the "bilious attacks" are generally headache attacks. Also, we shall find, when the stomach is not at fault, that as soon as the headache ceases the patient has a good appetite for his next meal. No inflamed stomach can be bad one day and all right the next.
3. What is the periodicity of these headaches, or attacks of nausea or vomiting, or indigestions, or heart-pains? This means not only the frequency, but also the relationship to activity, which will be mentioned later.
4. What is the duration of the disturbance, whatever it is?
5. At what age did these disturbances begin? We shall often find that they go back to school-life.
6. Does the patient like a dark room?
7. When attempting to read, study or write, does he become unexpectedly drowsy?
8. What is the effect of diet? We often ascertain that a patient has omitted from his diet first one article of food and then another, until his diet is down almost to a starvation one, to no purpose; the stomach upset is still repeated.
9. What is the relation of the headaches or stomach or heart reflexes to reading, to work, to theater-going, to card-playing, to the watching of a parade, to visiting the stores and shops, to riding in the cars and to going to the "movies"? All of this will progressively inform us, and will gradually make an impression on the patient. Still we have said nothing about the eyes; we have simply, by our questions, elicited facts. We will find that such a patient often cannot remain throughout a theater performance, or even through a church service. He also gets nervous if he rides in trolley cars; he has ceased to play cards; has gradually stopped reading, and has even become melancholic.

After such questioning, your patient will soon say to you, "Why, Doctor, is it my eyes?" And yet you have not said a word about eyes.

The presbyopic headache is more likely to be in the morning, and may be occipital. Such a headache may be due to high blood-pressure, to insufficient action of the kidneys or to the absorption of some substance produced by intestinal indigestion. A frequent cause of such headaches, however, is presbyopia.

Before leaving this subject, let it be urged that when pain exists anywhere in the head, with functional stomach and heart disturbances, after excluding all other causes by careful examination, the patient's eyes should be studied.

DISTURBANCES OF THE PARATHYROIDS

We do not yet know a great deal concerning the activity of the parathyroid secretion, but it has been shown that these glands are necessary for life, that convulsions occur if all of them are removed, and that the feeding of parathyroid or the administration of calcium will prevent these convulsions and save life. They may be abnormally secreting in certain forms of epilepsy; they may not be doing proper work in many forms of convulsions. Some forms of tetany are quite probably due to a subsecretion of these glands, and the feeding of parathyroid, or the administration of calcium is beneficial. Subthyroid secretion and subparathyroid secretion may be the cause of some forms of puerperal convulsions. It may always be wise to give a pregnant woman, during the last months of pregnancy, medicinal doses of calcium. She needs it not only for the growth of her child, but also to preserve her own teeth and to prevent softening of her own bones, to say nothing, perhaps, of combating the intoxication that may be caused by an insufficient parathyroid secretion.

The relationship of hypersecretion of the parathyroids to certain nervous diseases has not yet been shown, although such a study presents many possibilities of clinical and therapeutic interest.

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SATURDAY, JUNE 6, 1914

THE "DAY OF REST" AND HUMAN EFFICIENCY

The refreshing influence of the weekly recurring "day of rest" on a person subjected to the strenuous routine of a busy life is a feature which he himself can duly appreciate in terms of his "feelings" and "spirits." If it is desired to demonstrate the need of such relaxation and the benefits derived therefrom in some objective way, a method is not easily forthcoming. The problem is one which, in its broadest aspects, has a far-reaching importance in every community. The efficiency of the working man, the desirable length of the working-day, the interjection of pauses for rest in the schedule of labor for persons of different ages and stations in life — questions of this sort are constantly arising for solution by some plan which excludes purely subjective impressions and permits some more scientific basis for a tenable judgment in the matter. Not only in the field of manual labor, but also in innumerable other walks of life, in the case of the schoolchild, the office-boy, the factory-girl, the banker and the merchant, efficiency is the key-note of the times. Fatigue is the enemy of efficiency; and to detect and compensate for or overcome it, is the duty of those concerned with the promotion of human welfare.

In view of this it is of more than passing interest, from the standpoint of both public and personal hygiene, to ascertain suitable methods of approach to the problem of fatigue and the lessons which it discloses. Dr. Martin[1] and some of his associates in the Laboratory of Physiology at the Harvard Medical School have devised a satisfactory procedure for estimating variations in electrocutaneous sensibility in human beings. With the onset of general fatigue a progressive rise occurs in the value of the threshold stimulus. This, in turn, signifies a progressive lowering of sensitiveness, and, according to the view of Grabfield and Martin, a diminishing tone of the nervous mechanism as a whole. The Harvard physiologists have made a long series of experiments on first-year medical students in good health who were following a regular routine of school work during six days of each week. The routine was interrupted weekly by the Sunday recess, an interval occupied variously by the students, but in no case in precisely the manner of the week days. The daily observations made on these persons during several weeks show that at the beginning of the week the irritability tends to be high, that from then until the end of the week there is a fairly continuous decline in irritability, as judged by the sensory threshold, and that following the interruption of the routine by the intervention of Sunday, the irritability returns to the original high point.

The decline in irritability is interpreted as a cumulative result of general fatigue incident to routine. What is even more significant, however, is the added fact that a pronounced break in the routine — such as the "day of rest" occasions — may bring about a *return of sensitiveness to a high point or, in other* words, it restores the nervous tone. Studies continued in this direction should lead to some useful conclusions regarding the optimum of work, with respect to both its duration and type, that should determine the conditions under which the organism of man may be maintained without depletion.

THE PRESENCE OF DIPHTHERIA ANTITOXIN IN THE BLOOD OF NORMAL PERSONS

It has been known for some time that diphtheria antitoxin is present in the blood of at least some persons who, so far as known, never have had diphtheria. It is believed that the antitoxin may be transmitted to the child from the mother; it is present in the blood of about 80 per cent. of the new-born, but it soon begins to fade away.

Recently a method has been devised by Römer which makes it possible to titrate accurately the amount of antitoxin in the blood. Briefly, the method consists in the intracutaneous injection in guinea-pigs of a minute quantity of diphtheria toxin and the serum to be tested for antitoxin. If no necrosis results, the toxin has been completely neutralized by antitoxin in the serum. By this method, which permits of accurate quantitative measurement, Otto[1] has tested the serum of a number of persons under different conditions, some being in close contact with diphtheria patients, others not. It was found that there was more than one one-hundredth of a unit of antitoxin in each cubic centimeter of the blood of those who, without having been sick, had been in close contact with cases of diphtheria; others usually had much less. Of six fresh nurses who had less than one one-hundredth of a unit per cubic centimeter of blood, two suffered from diphtheria. These observations are significant because they indicate that this amount of antitoxin in the blood — one one-hundredth of a unit per cubic centimeter — probably suffices to protect against diphtheria. Indeed, Behring is said to have previously expressed his belief in the truth of this theory, and the object of his new diphtheria vaccine is to induce the production of at least that much antitoxin by the body itself. Older persons who have not had diphtheria may carry antitoxin in the blood in comparatively large quantities; nevertheless, the production of the antitoxin must be attributed to effects of invasion of diphtheria bacilli. In other words, the condition is one of active immunity due to infections of such mild character as to escape notice. Undoubtedly physicians and seasoned nurses who are freely exposed to diphtheria and yet rarely contract the disease owe their safety to an active immunity, the result of repeated contact with the bacilli. Otto found that diphtheria carriers, both those who had had the disease and those who had not, contained more antitoxin in their blood than patients who had just recovered from an attack. This shows that the mere presence of bacilli in the throat is sufficient to stimulate the production of antitoxin on which the immunity of the carrier himself would seem to depend.

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[1] Martin, E. G., Withington, and Putnam, J. J., Jr.: Variations in the Sensory Threshold for Faradic Stimulation in Normal Human Subjects, III, The Influence of General Fatigue, Am. Jour. Physiol., 1914, xxxiv, 97. Grabfield and Martin: Ibid., 1913, xxxi, 308.

[1] Otto, R.: Ueber den Gehalt des Blutes an Diphtherie Antitoxin bei gesunden Erwachsenen, Rekonvaleszenten und Bazillenträgern, . . ., Deutsch. med. Wchnschr., March 12, 1914, p. 542; abstr., The Journal A. M. A., April 18, 1914, p. 1291.

These observations are of much interest with respect to the problems of susceptibility to diphtheria. By the means of Römer's method, and also of the method described by Schick,[2] it is now possible to determine whether or not a person is susceptible to diphtheria, a question that often is of great practical importance.

LARGE CITIES AS HEALTH RESORTS

"Were I a physician, I could prescribe nothing but — 'Recipe: ccclxv drach. Londin. per annum'" (365 doses of London a year). Thus wrote a noted Londoner, Horace Walpole. "If a few days in London does your neurasthenic patient no good, his case may well be helpless and hopeless." These, the words of Dr. Clippingdale addressing the balneologic and climatologic section of the Royal Society of Medicine a few weeks ago on London as a health resort and as a sanitary city.[3] Those who are accustomed to send their patients to the mountains, the fashionable spa, the seashore or the "health resort" may ask whether this is merely subtle humor or ill-concealed sarcasm at the expense of what has been called "the healthiest, and with the exception of Madrid, the ugliest city in the world." Or are we as a profession perhaps unduly oblivious of the suitability of a large city for certain maladies, chiefly of a psychopathic or neuropathic nature? Let us follow Clippingdale's essay in this direction.

There are not a few persons who have a dread of open spaces, for example, the country. It is to such that a very large city, on account of its size and the almost infinite number of diversions it permits, appeals most remarkably. The London life is to such persons the material on which they live. There are persons who prefer looking on men and artificial things. The loneliness of the woods and green fields appals them. Many a patient sent to the monotony of the sea-shore to recuperate finds his first real joy and comfort in the return to the motley throng of some great city. In this spirit Charles Lamb once wrote: "I am naturally inclined to hypochondria; but in London it vanishes, as do other ills. The man must have a rare receipt for melancholy who can feel dull in Fleet Street."

Despite the numerous epithets of antipathy which have been recorded against the great English metropolis, despite the alleged lack of esthetic attributes, Clippingdale stoutly defends its suitability for persons suffering from certain nervous "dyscrasiae"; cases, not of true pathologic conditions, but of simple digression from the normal; cases of hypochondria, melancholia, insomnia and neuralgia of non-organic origin, the drug and alcoholic habits and morbid introspection; cases, in fact, requiring the very opposite of a "rest-cure." He insists that many means for rational psychotherapy are provided by the diversions of a great city. "Its historic, artistic and literary associations," writes Clippingdale, "its many picture-galleries and museums, its numerous places of amusement, the business activity, the Attic regions of Belgravia and the Alsatian retreats of the East End all combine to produce a state of exhilaration not met with elsewhere. In fact, it has been jocosely remarked that if Londoners themselves fell into a state of lethargy nothing would arouse them from it unless it were two Parliamentary elections in one year, together with an earthquake in the Strand." There is, of course, an underlying germ of truth in all of this. Not every man can be rescued from depression by the soothing environment of a sanatorium or the joys of the outdoor life. The heart of the city is like balm to a persistent minority who must be dealt with in the practical experience of every consultant.

As for London itself, we are reminded that the annual exodus therefrom is a "comparatively modern invention." Speaking from statistical comparison of the general mortality, it is a healthy city. Its natural advantages are enhanced by the large number of open spaces in its midst. If the climate is nothing to boast of, it must be remembered that "fog is not an atmosphere of poisonous microbes." After all, the question of liveableness in any environment is, as a rule, one of the temperament and adaptability of the individual. Americans have braved the dreaded tropics with comparative comfort and remained in perfect health. Manila and Panama have lost the terrors of climate, while the far North has become the field of pleasure-seekers. The healthfulness of an environment, urban or suburban, inland or coastwise, has become almost entirely a question of personal hygiene and mental satisfaction coupled with the indispensable accompaniments of public sanitation.

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[2] An Easy Test for Susceptibility to Diphtheria, editorial, The Journal A. M. A., April 11, 1914, p. 1176.

[3] Clippingdale, S. D.: London as a Health Resort and as a Sanitary City, Proc. Roy. Soc. Med., 1914, vii, Balneological and Climatological Section, p. 33.

THEOBALD SMITH AT THE ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH

The recent announcement[1] of the appointment of Theobald Smith of Harvard University as the head of the projected department of animal pathology, made possible by an additional endowment to the Rockefeller Institute for Medical Research, deserves something more than passing mention. The epoch-making contributions of this distinguished American investigator are, we apprehend, not so prominently known as they deserve to be. There is a tendency in this country, in connection with all fields of scientific work, to magnify the importance of those researches which especially lend themselves to popular exposition or exhibit some scintillating feature which quickly catches the public eye. Too often as a people we forget the fundamental researches — sometimes laborious and even hazardous — on which the superstructure of some familiar practice is based. The wonders of the dynamo are allowed to overshadow the underlying experiments of Faraday; the originality of an investigator like Theobald Smith is forgotten in the contemplation of the practical results that have followed his efforts. It is a pleasure, therefore, to refer to a fine appreciation which has just appeared in *Science* from the pen of one who evidently is familiar with the history of medical microbiology.[2] We are reminded that while Dr. Smith was yet a subordinate in the Bureau of Animal Industry in Washington, he had occasion to study the Texas fever of cattle, then the cause of great economic loss to the farmers and cattlemen of that as well as other states, and of countries the world over. He found at last that the disease was caused by a protozoan parasite so small that it found a spacious abode within the purlieus of a single red cell of the blood, which it ruthlessly destroyed. Smith and Kilborne announced also that this piroplasma, as it was called, is conveyed from animal to animal through the intervention of a cattle-tick, in which the protozoan undergoes a developmental cycle on which the perpetuation of its kind depends. They further learned that cattle recovered from the fever had become immune, and though well, might indefinitely carry the piroplasma in the blood and be a perpetual source of infection for cattle fresh from another district.

The physician of to-day can well appreciate what the discovery of insects as carriers of infective microbes has meant to medicine and to mankind. This finding alone would entitle most workers to everlasting fame. Dr. Smith's epoch-making contributions did not stop with the study of the etiology of Texas fever. Smith and Salmon were the first to announce, in 1886, that animals could be immunized not only by living germs but by sterilized cultures of the dead germs. "This announcement," says the writer in *Science*, "did not seem to start even a ripple in the bacteriologic pool." The germinal idea contained in these early experiments, however, in the course of time resulted in the manufacture of antitoxin.

Probably few persons who are not experts in this field realize that the forerunner of the wonders of modern anaphylaxis is described in the *Theobald Smithsche Phänomen*, as our German colleagues early termed it. This is one of the numerous evidences of that keenness of observation which further preceded the important innovations in bacteriologic culture that are to-day indispensable. The distinctions between bovine and human tubercle bacilli emphasized by Dr. Smith are still fresh in the minds of those who have followed the long controversy on this subject.

Without recounting further details of an eminently successful career we may congratulate the Rockefeller Institute, already so fortunate in having made itself an unsurpassed center for medical research, on the discriminating selection of another distinguished and productive member.

THE AQUEOUS HUMOR

Various structures of the eye, such as the lens, suspensory ligament and vitreous humor, receive no direct vascular supply, but depend on the intra-ocular fluid for their nutrition. This aqueous humor is continually renewed by the transudation of fluid from the blood-vessels of the ciliary processes into the anterior part of the vitreous cavity, the amount increasing with a rise of blood-pressure in the capillaries, or a fall in intra-ocular pressure. The latter in turn is affected by the blood-pressure and by variations in the escape of the fluid through the filtration angle. If the anterior angle becomes blocked as the result of inflammatory or other changes, the intra-ocular pressure rises gradually far above normal. This may seriously affect the circulation of blood through the retinal vessels, so that atrophy of the retina is produced as well as disturbances of the nutrition of the eye.

The increased intra-ocular tension in glaucoma is well known. The changes in the chemical composition of the aqueous humor not only in local eye disturbances, but also because of alterations in the quality of the blood, are less evident. The involvement of the eye in systemic or constitutional diseases is not unfamiliar. In diabetes the sight is often defective, and not infrequently the detection by an oculist of a commencing or well-developed cataract or a retinitis first arouses suspicion of a possible underlying disease. To speculate extensively on the immediate effects which the aqueous humor can have on the eye structures which it bathes and nourishes is of little avail until the factors which determine the chemical composition of the intra-ocular fluid are somewhat better understood. Like the cerebrospinal fluid, with which it has frequently been compared, the aqueous humor has generally been classed as a slightly modified lymph. This simple point of view does not take into account the possibility that the intra-ocular fluid is not a mere transudate, but is dependent for certain details of its composition on the selective function of the cells through which it originates. In contrast with true lymph, the aqueous humor normally contains no leukocytes, and its content of protein is extremely low (0.025 to 0.02 per cent.). The characteristics of such a fluid resemble those of some glandular secretions rather than those of tissue lymph, and for this reason one cannot prophesy precisely what changes it may undergo in connection with alterations in the nutrition of the body as a whole.

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[1] The Journal A. M. A., May 23, 1914, p. 1671.

[2] T. M. P.: Professor Theobald Smith and a New Outlook in Animal Pathology, Science, 1914, xxxix, 751.

Most of the known facts concerning the aqueous humor have been learned from analyses made on fluid obtained post mortem. Under such conditions chemical changes almost invariably have intervened. Dr. Ask[1] of the institute for medical chemistry at Lund in Sweden has lately investigated the sugar content of the aqueous humor in both man and animals, obtaining the fluid by drainage from the anterior chamber. His analyses show a close relationship between the concentration of sugar in the fluid and that in the circulating blood. Under ordinary normal conditions with a blood-sugar content of from 0.1 to 0.13 per cent., that of the aqueous humor will be from 0.12 to 0.15 per cent.; the primary fluid and that formed later show the same sugar concentration. When by experiment the content of sugar in the blood is caused to vary, the resulting hyperglycemia is accompanied by a parallel rise in the sugar content of the intra-ocular fluid. In pronounced pathologic conditions, however, when the excursions of the blood-sugar from the normal are very extensive, the content in the aqueous humor may fail to reach the blood maximum. This may be due to the slowness of the exchange between the blood and the eye-fluid, and perhaps also in part to some regulating secretory mechanism in the interior of the eye. In a case of human diabetic cataract, the sugar content and aqueous humor alike were found above normal (0.24 per cent.). Although in such conditions the intra-ocular fluid and the blood agree in composition, in other conditions, such as glaucoma or seclusio pupillae, in which enforced stagnation of the fluid in the anterior chamber exists, a diminution of its sugar content is by no means excluded. The interrelations between the composition of the blood and the fluid in the interior of the eye point to the desirability in ophthalmologic practice of recognizing the existence of hyperglycemia, especially since in diagnosis the estimation of sugar in the blood is being used in connection with the older routine examination of the urine for evidence of glycosuria.[2]

HEREDITY VERSUS FOOD IN DEVELOPMENT

It has become a dictum among those most concerned with the physiologic function of the mammary gland that "breed rather than feed" determines the quality and output of milk. The food of an animal may be varied within very wide limits without altering the composition of its milk, provided that the ration is sufficient in amount. The only constituent which is known to be altered in milk by changes in the food-supply of the mother is the fat. The composition of butter may be affected somewhat by the food supplied to the cow; but normally little if any influence on the chemical make-up of the milk can be produced by wide variations in the mineral content of the food.

The question as to what extent, if any, the structure and development of the fetus can be affected by the character of the maternal diet is somewhat analogous to that which concerns the possible alterations in the milk produced by the mother. In a sense both the milk and the fetus may be regarded as produced by a specific organ; the one by the mammary gland and the other by the placenta. An idea current among cattle-raisers is that a high mineral content in the ration will cause excessive skeletal formation in the fetus and consequent difficulties at its birth. Similar views are sometimes expressed relative to the development of the human fetus. In view of the general specificity and uniformity of composition and structure exhibited by the normal products of cellular or glandular activity in the animal organism — a feature which is expressed by the fixity of species and the constancy of the products thereof — and, further, that many ingested substances fail to traverse the placenta directly, it might be expected that diet, so long as it is abundant enough, would exercise slight modifying influence on the structure of the fetus. That is, selective action on the part of the placenta with a definite control of the mineral content of the fetus might be expected, the size of the skeleton being fixed by the germ-plasm and controlled by heredity, rather than subject to the quantity of inorganic matter consumed by the mother.

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[1] Ask, F.: Ueber den Zuckergehalt des Kanmerwassers, Biochem. Ztschr., 1914, lix, 1; Ueber den Zucker im Humor Aqueus beim Menschen, ibid., p. 35.

[2] The Variations in the Content of Sugar in the Blood, editorial, The Journal A. M. A., Jan. 10, 1914, p. 131. McLean, F. C.: The Sugar Content of the Blood and Its Clinical Significance, The Journal A. M. A., March 21, 1914, p. 917.

It has been remarked that "assumptions in nutrition are dangerous." The questions raised in the foregoing discussion cannot well be tested by experiment on human beings; but the effect which a high lime-intake by the mother may have on the skeletal development of the fetus has been subjected to experiment in the domestic animals.[1] Since grains are deficient in calcium, farm rations made up wholly of them will not supply to growing animals a sufficient amount of this element. For this reason growing or breeding swine, fed entirely on grain, should receive an additional supply of calcium, as calcium carbonate or calcium phosphate or in leguminous hay. Any drain on the organism with consequent loss of calcium is thus averted. The new Wisconsin experiments, however, have shown that though the nutrition of the mother has a great influence on the offspring, the size is not modified by the liberal supply of any one element. Although a high calcium ration, containing over five times as much lime as the standard ration, was added to the feed of the mother during the entire period of gestation, no evidence was gained that the skeleton of the fetus was increased in any dimension or in calcium content thereby. As Hart and his co-workers remark, if size can be influenced at all by the quantitative relation of the nutrients supplied, it is clear that many factors are involved and not a single mineral element. Size is in a very large measure fixed by heredity.

Current Comment

CREATININ IN THE BLOOD

With the advent of the newer accurate and rapid methods for the clinical examination of the blood, chemical statistics on this fluid are accumulating to a surprising degree. Elaborate series of data are already available concerning the sugar-content and the concentration of various types of metabolic waste-products or catabolites, such as urea, uric acid and ammonia, in both health and disease. The mention of hyperglycemia or of an increase in the percentage of nonprotein nitrogen in the blood begins to sound almost as familiar as the every-day reports of the clinical laboratory with respect to urinary findings. Somehow the problems of the composition of the blood appeal to those interested in the phenomena of abnormality as something preeminently significant. The unique rôle of the blood in the distribution of both food and waste gives an exceptional interest to the ascertained facts about it. Until very recently, owing to the lack of suitable analytic procedures, the number of creatin literature has been exceedingly small. With their usual mastery of technic, Drs. Folin and Denis[1] of the Harvard Medical School have undertaken an elaborate series of such determinations in order to learn whether in pathologic conditions there is any specific retention of creatinin similar to the specific retention of uric acid in the blood in gout.[2] No such condition could be brought to light in the examination of the blood of two hundred patients at the Massachusetts General Hospital. Ordinarily, the content of creatinin ranges from 1 to 1.5 mg. per hundred grams of blood. Except in extreme conditions of retention approaching anuria the creatinin in the blood remains at the normal level. The completeness of the creatinin excretion in man is exceeded only by the still more complete removal of ammonium salts. It is interesting to note that the figures obtained from the common domestic animals do not differ materially from those derived from analysis of human blood, except in the case of birds. The absence of creatinin from the blood of these species confirms Paton's discovery that creatinin is not a normal waste-product of birds.

MORE MEDICAL JOURNALS?

The newest venture in the domain of medical journalism, represented by the publication of the *Hamburgische medicinische Ueberseehefte*,[3] raises the old question as to the desirability of the ever-increasing numbers of such enterprises. We have long believed that specialization in this field should be encouraged only so far as existing mediums fail to provide for the suitable expression of current medical experience and discovery. Far more can be accomplished in many directions by the unifying of forces and the better utilization of existing opportunities than by the dissipation—we cannot always call it expansion—of effort. The improvement and advancement of scientific medical journalism, and thereby of the sciences and arts that it serves, is not necessarily secured by more pages in a larger number of publications, but frequently far better by a critical editorial policy which, acting for the good of a profession rather than the promotion of individuals, rejects the commonplace and untenable, and expects even the best of its contributions to conform to the highest standards of expression. Gallons of ink have been spilled in useless writing, and reams on reams of paper filled with reiterated histories, useless protocols, unprofitable controversy and preposterous trivialities—all to make so-called literature. The demands for novelties are frequently only the expression of personal ambitions rather than the crying needs of science or practice. With this preface we may proceed to the examination of the new journal emanating from the Eppendorfer Krankenhaus in Hamburg under the editorial supervision of Dr. Brauer, the director of the hospital, and Dr. Hegler of its staff. It is issued, we are told in the introductory notice, to meet the special needs of German or German-speaking physicians who are engaged in practice in foreign lands. We are further told that the numerous existing medical periodicals, despite their admitted excellence, offer, aside from results of purely scientific value, too many contributions which have only a transitory interest or concern only the specialist and theorist. It is the same set of statements that has appeared in correspondence of The Journal from time to time in the column on Knocks and Boosts, so that this point of view will not be unfamiliar to our readers. The *Uebersechefte* are designed to act as a medium of scientific communication with those physicians who are settled on distant shores; to furnish to these colleagues authoritative accounts of the permanent acquisitions of medical science and the newest devices in practice. They are to be devoted to German progress and supported by German societies that have foreign interests. All national propagandas have a certain honorable justification. We have frequently spoken with pride of the publications of our own Bureau of Science in the Philippines. The real test of their justification for existence lies in the good accomplished; and this, in turn, depends on the intellectual pabulum supplied. The collaborators of the new enterprise are scattered from Buenos Aires to Shanghai, from Constantinople to New York, Dr. Flexner being the representative from the United States. The first number (53 pages) of the *Uebersee-hefte* opens with a theoretical discussion and classification of "diatheses" by von Behring; papers on cardiac therapy, by Brauer; emetin treatment of amebic dysentery, by Ruge; the etiology of leprosy, by Unna, etc.; the usual book reviews and a few unimportant news items. Wherein the publication is expected to meet the needs of its subscribers better than do the excellent well-known medical weeklies of Germany, remains to be demonstrated; it is not shown in the initial number.

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[1] Hart, E. B., Steenbock, H., and Fuller, J. G.: Calcium and Phosphorus Supply of Farm Feeds and Their Relation to the Animal's Requirements, Agric. Exper. Station, University of Wisconsin, Research Bull. 30, 1914, p. 21.

[1] Folin, O., and Denis, W.: On the Creatinin and Creatin Content of Blood, Jour. Biol. Chem., 1914, xvii, 487.

[2] The Gout Situation, editorial, The Journal A. M. A., Sept. 20, 1913, p. 970.

[3] A biweekly journal, i, No. 1, April, 1914, published by Fischer's med. Buchhandlung H. Kornfeld, Berlin W. 35. Subscription price, 20 marks a year.

McCLURE'S MISTAKE

On another page,[1] in reply to numerous inquiries, we have stated once more the truth regarding the scopolamin-morphin method of producing analgesia in labor and its unreliability and danger. The present effervescence of medical interest in this subject is excited by an outburst of enthusiasm concerning the treatment as applied at Freiburg, by Krönig and Gauss, published in the June issue of *McClure's*. The article appears under the signature of two women, evidently not medical authorities, and contains frequent quotations of statements credited to Krönig and Gauss. In an address delivered by Krönig before various societies when here last November, published in the May issue of *Surgery, Gynecology and Obstetrics*, statements are made almost identical with some of those in the *McClure's* article. We hesitate to believe that either Krönig or Gauss would instigate or endorse such a sensational puff for themselves, but so clear does the evidence appear that this impression is almost forced on us. If the publication was sanctioned by either or both of them it indicates an advertising initiative which bids fair to rival Friedmann. It is needless to explain to physicians that many of the statements contained in the *McClure's* article are ridiculous. As usual, not the physician, but the credulous and innocent public will be harmed by this unfortunate exploitation.

GET OUT OF THE HABIT

Recently we received a manuscript from a man standing high in the profession, in which, among other things, a certain much-advertised proprietary medicine was recommended. The author was asked whether he was sure that he was getting good results from the preparation. His reply was instructive. To quote:

> While I have used this preparation for years, I must say that I have not seen results that I could attribute to it directly, and its use has become merely a habit. As it has not been accepted by the Council, I shall drop the use of it, as I am not at all convinced that it is of any value.

Unquestionably, there are thousands of physicians who, if they would, might make as honest a statement as the one quoted.

ANATOMIC MODELS

The wide-spread use of the Born method of wax-plate reconstruction in the preparation of models illustrating the form and relations of minute anatomic structures has led to the preparation of a large number, representing the most diverse types of morphologic tissue components. Heretofore it has been necessary to send these valuable original models abroad in order to secure replicas. The trouble, expense and risk of accident incurred in transporting such fragile articles as, for example, a reconstruction of the glomerulus of the kidney, in connection with conditions difficult to meet have discouraged those desirous of securing such models. The Wistar Institute of Anatomy in Philadelphia, an institution which is not only serving to promote research along broad lines of biology, but also functioning as a clearing-house in matters of scientific publication, etc., has added another to its useful activities by establishing a department for what might be called the publication of original models. The institute will receive original anatomic models, produce as many replicas as may be subscribed for and distribute them for the actual cost of production. By this means teachers and students of anatomy will be enabled to examine more of the original models resulting from research in our best laboratories. According to the *Anatomical Record*,[1] the work will be done under the personal supervision of Dr. B. Eric Dahlgren, a well-known expert of wide experience in the production of biologic models. The first replica will be made under the supervision of the author of the model. The model will be retained at the Wistar Institute as a guide in the production of others.

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[1] See Queries and Minor Notes, Scopolamin and Morphin Anesthesia, p. 1827.

[1] *Announcement in Anat. Rec.*, 1914, viii, 228.

Medical News

CALIFORNIA

New Officers.—Los Angeles County Medical Association, Santa Monica Bay branch, April 6: chairman, Dr. C. P. Thomas; secretary, Dr. Byron Palmer.

Immunization of National Guard.—To perfect plans quickly to render the national guard of the state immune against small-pox and typhoid fever, a conference of medical officers was called, May 11, by Maj. Charles W. Decker, commanding field hospital No. 1, at the Armory Exposition Park, Los Angeles.

Sanitation of Camp of "Army of the Unemployed."—Dr. Hugh Beattie, health officer of Sacramento County on an inspection of the camp of the "Army of the Unmeployed," north of Sacramento, reported the conditions to be very bad and recommended the dispersal of the "army." In this he was not sustained by the state board. Sanitary Inspector Ross employed by the State Board of Health, after an investigation of the conditions, made such recommendations to the board that instructions were given to the local health officer to have the nuisance abated.

Rabies.—In March the supervisors of Sonoma County repealed the dog-muzzling ordinance which had been in force in that county since Dec. 4, 1913. The secretary of the State Board of Health immediately ordered the county quarantined under existing state laws. The order was subsequently modified to require the muzzling of dogs within those townships of the county most heavily infected with rabies. Los Gatos Canyon District of Fresno County was quarantined for rabies under Chapter 369 of the Statutes of 1913 on account of the presence of rabies in dogs, cattle and horses.

Fly-Traps Required by Ordinance.—Richmond has an anti-fly ordinance requiring that every person in charge or control of any store, market, restaurant or other place where food or foodstuffs are sold, served or dispensed, and every owner or person in charge of a public stable, shall maintain in his place of business one or more fly-traps properly baited. The size of these traps is fixed at a minimum of 500 cubic inches, and it is made the duty of the Health Department to inspect the traps from time to time to see that they are efficiently maintained. Under this ordinance the time of one man is given to baiting and attending to the traps.

Mosquitoes in California.—The secretary of the State Board of Health has requested the surgeon-general of the United States Public Health Service to take such action as might be necessary to prevent the introduction of *Stegomyia calopus* into the state. It is believed that the chief source of danger of entry of the yellow-fever mosquito is from Texas and Mexico by way of the railroad trains coming from those sections. The surgeon-general replied that the matter had been referred to Dr. Thos. R. Crowder, superintendent of sanitation of the Pullman Company, for an opinion as to the best method of handling the problem.

Personal.—Dr. and Mrs. John C. Taylor, Los Angeles, have been appointed medical missionaries to India by the synod of the reformed Presbyterian Church, and will be stationed at Patiala. They will leave for their post of duty early in September.——Mr. H. C. Moore, United States food and drug inspector, has been appointed food and drug inspector of the State Health Board without salary.——Mr. J. J. Rosenthal, Mr. Geo. L. Bell and Mr. Carlton H. Parker have been appointed inspectors for the State Health Board, and the commission of immigration and housing of California has been notified of the appointments.——Miss Violet M. Bathgate has been appointed assistant bacteriologist at the State Hygienic Laboratory, vice Miss Ethel Skolfield who has resigned.

CONNECTICUT

New Officers.—Norwich Medical Society, May 18: president, Dr. James J. Donohue; secretary-treasurer, Dr. Lester E. Walker.

Gift to Yale Medical School.—At its spring meeting, May 29, the General Education Board (Rockefeller Foundation) gave $500,000 to the Yale Medical School on condition that the school procure complete teaching and medical control of the New Haven Hospital and that the teachers in the main clinical branches be placed on the full-time or university basis.

State Society Elects.—The Connecticut State Medical Society held its one hundred and twenty-second annual meeting at New Haven, May 20-21, under the presidency of Dr. D. Chester Brown, Danbury. The following officers were elected: president, Dr. Oliver C. Smith, Hartford; vice-presidents, Dr. Stephen J. Maher, New Haven, and John B. Kent, Putnam; secretary, Dr. Marvin McR. Scarbrough, New Haven (reelected); treasurer, Dr. Joseph H. Townsend, New Haven, and delegate to the American Medical Association, Dr. D. Chester Brown, Danbury. Hartford was selected as the next place of meeting. The society endorsed the work of the State Tuberculosis Commission and of the state sanatorium for tuberculosis.

GEORGIA

Personal.—Dr. John F. Lancaster, Forsythe, has been appointed quarantine and health officer of the port of Mobile, Ala.——Dr. Benjamin S. Purse, Savannah, has been elected chief surgeon of the Army of the Tennessee.

Hospital for Tuberculosis and Pellagra.—The commissioners of Bibb County, the Bibb County Medical Society, the City Council of Macon, and the Macon Board of Health are uniting their efforts for the establishment of a special hospital for the treatment of patients suffering from tuberculosis and pellagra.

IDAHO

Personal.—Dr. Franz H. Brandt and family, Boise; Dr. Clifford M. Cline, Idaho Falls, and Dr. William F. Howard, Pocatello, sail for Europe this month.

New Officers.—Southern Idaho District Medical Society at Caldwell, April 28: president, Dr. Samuel J. Miller, Caldwell; secretary-treasurer, Dr. Robert L. Glase, Boise. The next meeting will be held at Boise in July.

ILLINOIS

Personal.—Dr. and Mrs. Harry B. Bailey, Rockford, sailed for Europe, June 3.——Dr. Effie L. Abbott, a member of the Anna State Hospital, has been transferred to a similar position at the Elgin State Hospital.

Health Talks.—The laboratory of bacteriology of the University of Illinois, Champaign-Urbana, under the direction of Assistant Professor Otto Rahn, has arranged a series of lectures on public health to be given weekly during the first semester of 1914-15.

News about Sanatoriums.—During the last year, 166 patients were treated at the Chicago-Winfield Tuberculosis Sanatorium at Winfield, at a cost of about $1.17 per day. Dr. James L. Anderson, Pittsburgh, Pa., has been elected medical director of the institution, to take office June 1.——The supervisors of La Salle County have awarded the contract for the construction of the new tuberculosis sanatorium at the county farm for $7,643.——At a meeting of the Kane County Medical Society, at Geneva, May 6, the association heartily endorsed the proposition for a Kane County Anti-Tuberculosis Sanatorium, and pledged their support. The supervisors of Kane County have already appropriated $5,000 toward the purchase price of a site for the sanatorium.

Chicago

Bust Unveiled.—A convocation of the College of Medicine of the University of Illinois will be held June 10, in honor of the unveiling of a bust of Dr. Daniel A. K. Steele.

Personal.—Dr. Frances Dickinson has been reelected president of the Artcraft Institute Guild.——Dr. Robert C. Reimche has assumed charge of the Chamberlain, S. Dak., Sanitarium.

Rush Medical Alumni to Meet.—The week of June 8-13 will be observed as "Homecoming Week" by Rush alumni. Special clinics will be held at the college and by alumni practicing in the city. The faculty will entertain the alumni with a banquet to be given June 10, at which Dr. Frank Billings will preside.

Free Ice to be Distributed to Poor.—The Consumers' Company announce that free ice certificates would be available for needy and destitute families. The offer made first for all the ice needed for the Visiting Nurse Association has been expanded to include the Infant Welfare Society, the United Charities and every other recognized charitable organization of the city, including the Volunteers of America, Salvation Army and all deserving cases reported by clergymen and physicians.

INDIANA

Personal.—Dr. and Mrs. Charles A. Pfafflin, Indianapolis, sailed for Europe, May 30.——Dr. Thomas B. Eastman has been appointed a member of the Indianapolis Board of Health, vice Dr. Moses Thorner, resigned.

Marked Increase in Measles.—Reports of 2,628 cases of measles in Indiana were made to the State Board of Health for the month of April. Twenty-eight deaths from the disease were reported, and sixty-three counties recorded the disease as prevalent within their borders. The increase over the preceding month was alarming.

Sanatoriums Quit.—The Rockwood Sanatorium Company, which closed its tuberculosis sanatorium at Danville in June last, gave notice to the secretary of state, May 14, of its dissolution as an incorporated body.——The Plymouth Sanatorium and Hospital has been closed by order of the Board of Directors, and will be offered for sale. The building was erected in 1910 at a cost of more than $50,000. Dr. Novitas B. Aspinwall, who has been in charge of the sanatorium, will conduct a similar institution in Plymouth in connection with Miss Aura Southwick.

IOWA

Personal.—Dr. and Mrs. Bert A. Bowers and family, Granville, left for Europe, May 14.——Dr. Millard F. Pritchard announces his retirement after forty years of continuous practice in Cherokee.

Iowa Medical Women Elect.—At the annual meeting of the Iowa State Medical Women, held in Sioux City, May 14, the following officers were elected: president, Dr. Kate S. Harpel, Boone; vice-presidents, Drs. Jeanette F. Throckmorton, Chariton, and Mary K. Heard, Iowa City; secretary, Dr. Margaret Armstrong, Des Moines, and treasurer, Dr. Grace F. H. Jerger, Waterloo.

KANSAS

Personal.—Dr. John B. Dykes, Lebanon, is a candidate for Congress from the sixth district of Kansas, on the Republican ticket, and has no opponent of his party, and as the district is normally Republican, it seems probable that he will be elected.

Physicians Exonerated.—In the case of Drs. Charles E. Bowers and Thor J. Jäger, Wichita, charged with negligence in treating and operating on Mrs. Nellie Stout, Hazleton, the court held that both doctors had used their best judgment, and the jury, without leaving the jury-box, rendered a verdict for the defendants.

KENTUCKY

Personal.—Dr. W. Ed Grant has been reappointed health officer of Louisville.——Dr. Borowski has been appointed medical inspector of the Department of Health of Louisville.

University News.—Dr. Henry Enos Tuley has succeeded Dr. W. Ed Grant as dean of the medical department of the University of Louisville.——Hon. D. W. Fairleigh, president of the board of trustees of the university, has resigned and been succeeded by Hon. Arthur Y. Ford.——Dr, Virgil E. Simpson has been elected president of the alumni of the university.

Hospital Notes.—The State Board of Control has decided that a hospital for the tuberculosis patients of the Eastern Kentucky Hospital for the Insane be erected at Lexington at once. The structure will cost $300,000.——Dr. Joseph A. Stucky, Lexington, and representatives of the State Board of Health, State Anti-Tuberculosis Association, and American Red Cross, have established a clinic at Oneida for the treatment of trachoma, tuberculosis and hookworm.

State Hospital Changes.—Dr. Frank L. Peddicord, Burlington, has succeeded Dr. William E. Gardner as superintendent of the Kentucky Hospital for the Insane, Lakeland. Dr. Gardner has returned to his former home in Hardin county.——Dr. William E. Render, Brownsville, assistant physician to the Eastern Kentucky Hospital for the Insane, Lexington, has been appointed first assistant physician to the Central Kentucky Hospital for the Insane, Lakeland.——Dr. W. E. Campbell, Bowling Green, first assistant surgeon at the Hopkinsville State Hospital, has been appointed second assistant physician at the Eastern Kentucky Hospital.——Dr. H. G. Sanders, Campbellsville, has been appointed first assistant physician at the Hopkinsville State Hospital.

MARYLAND

Medical Board Reappointed.—The Police Board of Baltimore has reappointed the Board of Medical Examiners which consists of Dr. James M. Craighill, chief police physician, and Drs. Hubert C. Knapp, Thomas P. McCormick, Walter F. Sowers and Elliott H. Hutchins.

New Officers.—Montgomery County Medical Society, April 25: president, Dr. John L. Lewis, Bethesda; secretary, Dr. Claiborne H. Mannar, Rockville.——Cecil County Medical Society: president, Dr. Harry A. Cantwell, North East; secretary-treasurer, Dr. Howard Bratton, Elkton.

Personal.—Dr. Tedrow S. Keyser of the staff of the Pitts Clinic, Baltimore, has resigned to accept a position with the Neurological Institute, New York City.——Dr. Wilbur P. Stubbs has been appointed medical examiner of the schools of Baltimore, vice Dr. Richard A. Urquhart, deceased.——Dr. Arthur H. Hawkins has been appointed representative of the Cumberland Academy of Medicine on the State Board of Health.——As a result of friction which is said to have existed several months between the mayor and Health Commissioner Nathan R. Gorter, a request was made, May 18, for the resignation of Dr. Gorter, to take effect immediately. Dr. Gorter has not resigned.——Dr. Jacob Thorkelson, Baltimore, has moved to Dickenson, N. Dak., where he will be associated with Drs. Homer A. Davis, Jesse W. Bowen, and Justus Ohage, Jr.

MASSACHUSETTS

Governor Selects Heiser.—Governor Walsh has confirmed the story that he has selected Surg. Victor P. Heiser, U.S. Public Health Service for health commissioner, of Massachusetts, in the event of the passage of the bill reorganizing the State Board of Health.

Typhus Fever at Granite and Quincy.—May 20, 1914, a case of typhus fever was notified at Graniteville in an immigrant arriving at Boston April 23 on the steamship *Rhaetia* from Hamburg. He was taken ill May 8. Another case from the same vessel was found at Quincy. The patient was taken ill May 3.

New Officers.—Hampshire District Medical Association at Northampton, May 15: president, Dr. Edward W. Brown; secretary, Dr. Joseph B. Collins, both of Northampton.——Franklin District Medical Society, at Greenfield, May 12: president, Dr. John E. Urquhart, Ashfield; secretary,treasurer, Dr. Halbert G. Stetson, Greenfield.

New Secretary of Faculty.—The executive committee of the trustees of Tufts College, Boston, approved the appointment of Dr. Frank E. Haskins as secretary of the medical and dental faculties in place of Dr. Frederick M. Briggs, who will retire from active service September 1, to become professor of surgery and secretary of the medical and dental faculties, emeritus.

MINNESOTA

New Officers.—Rice County Medical Association at Northfield, May 14: president, Dr. Arthur C. Rogers; secretary-treasurer, Dr. Frederick U. Davis, both of Faribault.

Personal.—Dr. Peter C. Davison, Clara City, has sailed for Europe.——Dr. H. W. Hill will assume his duties as executive secretary of the Minnesota Public Health Association, July 1.

Sanatorium Notes.—Lincoln, Lyon, Redwood, Pipestone, Murray and Cottonwood counties have agreed jointly to construct a sanatorium for patients of those counties, and they have invited Rock, Noble and Jackson counties to unite with them. The counties have already levied a tax of 0.6 of a mill, and if the other counties take similar action, the amount will be raised to $50,000. This, with the amount agreed to be paid by the state, will make the total amount available for his institution $100,000.——Union, Chippewa, Renville and Yellow Medicine counties have considered and rejected the project of a tuberculosis sanatorium at Granite Falls. The chief argument appears to be that Lac Qui Parle County should have a sanatorium of its own.——St. Lewis County is to have a tuberculosis sanatorium to cost $50,000. One half of this expense is to be met by the state.——Work on the construction of the new Goodhue County Sanatorium, near Cannon Falls, will be commenced this month. The building is to cost $20,000.

NEW YORK

New Officers.—Mount Vernon Medical Society, May 15: president, Dr. Charles Krumwiede; secretary, Dr. Frank A. M. Bryant.

Personal.—Dr. John W. Conks, Syracuse, has been appointed professor of pathology in the North Dakota State University.

Sanatorium to Open.—The Metropolitan Life Insurance Company announces the dedication of its tuberculosis sanatorium for employees at Mt. McGregor, Saratoga County, June 20, at noon.

Antitoxin Farm.—The Hungerford Farm, Guilderland, has been sold to the state for $9,500, and the state will establish a farm for antitoxin and hygienic laboratories, which have been maintained in Albany for several years.

New Clinic Established.—Physicians of Southold and Shelter Island have organized a clinic which is to meet regularly at the Eastern Long Island Hospital, Greenport. ——The physicians of Patchogue are about to open a free dispensary.

Communicable Diseases.—The number of cases of scarlet fever in the Auburn prisons has reached nearly 80, most of the sufferers being in the women's prison. The prison staff of four physicians has received additional help from the State Health Department. It is said that the cases are all mild.——There is an epidemic of measles at Princes Bay, Borough of Richmond. In the neighborhood of 100 cases have been reported.

Child Welfare Campaign Exhibit.—An extensive campaign for the reduction of infant mortality in the state by means of lectures, literature and other forms of education and publicity has been inaugurated by the State Department of Health and itineraries for three exhibits are being prepared. They are planned not only to be instructive to mothers but to demonstrate the necessity and value of the visiting nurse, infant welfare stations, and other welfare work. A series of public meetings will be arranged for each city visited, and it is hoped that permanent welfare work will be organized in every city visited by the exhibits. In connection with this campaign a copy of the department's booklet on "How to Save the Babies" is being mailed to every mother in the rural districts of the state on the receipt of the birth certificate of her child.

Report of Vital Statistics.—A warning has been issued to physicians and registrars throughout the State in regard to reporting vital statistics. It is the purpose of the department to use to its full extent the authority with which it is vested to secure obedience to the provisions of the law in relation to vital statistics. The following is the notice:

> To Physicians: The attention of all physicians is called to the provisions of the said law.
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> Every physician in attendance upon a birth must, within five days after such birth, file with the local registrar a certificate thereof on the prescribed form. Every medical certificate of death must be made out by the physician, last in attendance, in the form and manner prescribed. Every physician, who has not already done so, must register immediately with the local registrar.
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> All births which have not been reported within the period prescribed by law may be registered with the State Department of Health up to May 30 without penalty. After that date, it is the purpose of the Department of Health to take such legal action as seems necessary to secure full registration of all births occurring in this State, and to enforce the penalties prescribed by law.

Health News.—This is the title under which the State Department of Health has issued its last *Bulletin* and the first one for which Dr. Hermann M. Biggs, state commissioner of health, is entirely responsible. It is called the "Principal's Number" and is devoted to health work as it applies to the school, and to pointing out the function of the school in public health education. In his letter to the principals of the state Dr. Biggs states that it will be the purpose of the department so to prepare the *Monthly Bulletin* that it will be of special service to the school principals throughout the state as well as to the local health officers and other health workers for whom it is particularly designed. It will be the aim of the editor to include in each number material which is timely and important for children to know. This will be summarized under the heading "School Health Lessons." Dr. Biggs asks the principals to see that the gist of this monthly lesson shall be read and explained to the children either by the principal or by some teacher appointed by the principal at a designated assembly when both teachers and pupils are present.

New York City

Illegal Sale of Hypodermic Needles.—During the past week four druggists have been arrested and held on the charge of having sold hypodermic needles to persons other than physicians and without the prescription of a physician.

New Officers.—Flatbush Medical Society at Brighton Beach Casino, May 8: president, Dr. Walter D. Ludlum; secretary, Dr. Stanley B. Thomas, both of Brooklyn.——Valentine Mott Society, New York City: president, Dr. Emil Heuel; secretary-treasurer, Dr. Joseph E. Lumbard.

Movies Teach Health Work.—The Motion Picture Exhibitor's Association of Greater New York has offered the Health Department the services of more than 800 moving picture theaters for the educational work of the Department. The start was made on May 16 when hundreds of theaters displayed slides calling attention to the "Clean-up" campaign inaugurated by Commissioner Goldwater. This will be followed by announcements concerning flies, typhoid fever, care of babies, etc.

Death Certificates in New York City.—During 1913 almost 65,000 certified copies of death certificates were issued by the Department of Health, as set forth in the *Weekly Bulletin* May 23. It is said that fully 80 per cent. of these were used in obtaining funds to bury the deceased person. The savings banks require them before money for burial purposes will be paid from the accounts of deceased depositors, many transcripts are required on account of the collection of insurance policies, the probate of wills in this and foreign countries, etc. Certificates sent abroad must be vised by the consul representing that country.

Hospitals and Isolation Wards.—In view of the fact that the Sanitary Code requires every public hospital and dispensary in the city of New York to provide and maintain a suitable room or rooms for the temporary isolation of persons suffering from infectious diseases, a survey of the hospitals and dispensaries of the city has revealed the fact that a considerable number of institutions have failed to comply with this requisition. It was discovered that 11 small hospitals and 39 dispensaries make no provisions for isolation. The department has appealed to the managers and the medical staffs of these institutions urging that they make an earnest effort promptly to meet the requirements.

Insurance Companies Cooperate with Health Department in Public Health Education.—In carrying on an extensive health campaign, the Department of Health has frequently found it difficult to reach large numbers of people quickly. After a conference with the representatives of the Metropolitan and Prudential Life Insurance companies, these companies have placed the services of their agents at the disposal of the Department of Health for the distribution of public-health literature. This means approximately 3,000 agents visiting the homes of 750,000 families weekly. The department seeks further cooperation along these lines and will be pleased to hear from organizations which are prepared to contribute assistance.

Personal.—Dr. Mark J. Schoenberg has been awarded, by the New York State Medical Society the Lucien Howe prize for his research work on ocular anaphylaxis.——Dr. Jacques Loeb of the Rockefeller Institute for Medical Research, has been elected correspondent of the French Academy of Science, in the section of anatomy and zoology, to succeed the late Lord Avebury.——Dr. Smith Ely Jeliffe has been elected a corresponding member of the Paris Neurologic Society.——Dr. Charles Bolduan has been appointed head of the new Bureau of Public Health Education of the Department of Health.——Dr. S. Adolphus Knopf gave the opening clinic, on June 2, for a postgraduate course to be inaugurated by the Bruchesi Tuberculosis Institute, Montreal.

Cancer as a Public Health Problem.—The *Monthly Bulletin* of the Department of Health of the city of New York is devoted to information concerning cancer. Curtis E. Lakeman, executive secretary of the American Society for the Control of Cancer, gives a statement of the cancer problem as it is at present understood, together with information and warnings to the public for the control of this increasing, fatal disease. Some statistics are given which show that the mortality from cancer in the registration area of the United States per 100,000 population increased from sixty-three in 1900 to seventy-seven in 1912. In New York State the rate has increased from forty-three for the three-year period 1887-1889 to eighty-six for the period 1911-1913. Warning is given against radium fakes and other fake cancer cures.

Administrative Control of Whooping-Cough.—A plan for the supervision and treatment of whooping-cough has been developed by the Department of Health. A survey has recently been completed of the institutions, hospitals and dispensaries of the city, with a view to determining what institutions treat whooping-cough at the present time, what institutions desire to maintain whooping-cough clinics, and what facilities they possess for dealing with this disease. All together 116 institutions were visited; of these 78 reported that they had no patients with whooping-cough applying for treatment; only five have a district physician caring for whooping-cough cases in their homes; 67 institutions admitted that their physicians did not report all cases of whooping-cough to the Department of Health, and only four institutions maintained and supported classes for treating cases of whooping-cough on the premises. Three of these were hospitals and one a dispensary. The investigation shows why whooping-cough is so prevalent in this city and why it has failed of administrative control. The department will take up the question with the Associated Out-Patient Clinics and the hospitals, and it is hoped that before long adequate facilities for the care of patients suffering from whooping-cough will be provided.

OHIO

New Officers.—Perry County Medical Society reorganized at Lexington, April 29: president, Dr. Calvin B. Holcomb, Corning; secretary-treasurer, Dr. Robert W. Miller, Hemlock.

Personal.—Dr. Walter E. Obetz, Columbus, has been appointed assistant epidemiologist of the staff of the Ohio State Board of Health.——Dr. George Goodhue, Dayton, who was operated on, May 12, at Rochester, Minn., for intestinal ulcer, is reported to be doing well.——Dr. William H. Buechner, Youngstown, was given a dinner in honor of his fiftieth birthday anniversary by members of the medical profession and others, May 23.——Dr. and Mrs. Charles U. Hanna, Zanesville, sailed for Europe June 4.——Dr. and Mrs. Charles M. Neldon, Coshocton, will sail for Europe June 12.

To Promote Medical and Dental Supervision of School-children.—Dr. Porter B. Brockway, Toledo, recently elected president of an organization for the promotion of medical and dental supervision of children in rural as well as in city schools, announces the following committee for cooperation with the superintendent of the public schools: Dr. William H. Peters, health officer of Cincinnati; Dr. Erwin A. Peterson, chief medical inspector, Cleveland; Dr. Herbert M. Platter, Columbus; Dr. Eugene F. McCampbell, Columbus, secretary, State Board of Health, and Dr. F. R. Chapman, Columbus, secretary of the Ohio State Dental Society.

Cincinnati

Hospital Staff Election.—At the annual meeting of the staff of the Cincinnati Hospital, May 28, the following officers were elected: president, Dr. Benjamin K. Rachford; vice-president, Dr. Robert Carothers; secretary, Dr. Meyer L. Heidingsfeld; and treasurer, Dr. Edwin W. Mitchell.

Alumni Meeting.—The Alumni Association of the Ohio-Miami Medical College has arranged an elaborate clinical program, beginning June 10. On this day, Dr. William E. Haggard, Nashville, Tenn., will hold a clinic on surgery, and Dr. Christian R. Holmes, Cincinnati, one on otology. On June 11, Dr. Wendell C. Phillips, New York City, will lecture on the "Conservation of the Hearing Function," with illustrative cases, and Dr. George A. Fackler will conduct a clinic on internal medicine. In the evening, the annual banquet of the association will be held. On June 12, Dr. Richard C. Cabot, Boston, will conduct a medical clinic, and Dr. Joseph Ransohoff, Cincinnati, one on surgery. All of these clinics will be held in the morning, and at the Cincinnati General Hospital. The afternoons will be devoted to clinics at the various local hospitals. The commencement exercises will be held on the morning of June 13 at the gymnasium of the university.

PENNSYLVANIA

Health Board Superseded.—The Chester Board of Health was abolished May 18, and the authority of the board transferred to the Department of Public Safety.

Gift to School Library.—The Phi Beta Pi Fraternity has presented the library of the School of Medicine of the University of Pittsburgh forty-five bound volumes of The Journal of the American Medical Association.

Quarantine Hospital Inadequate.—The State Economy and Efficiency Commission has inspected the Quarantine Hospital at Marcus Hook, and report it inadequate to meet the demands of the increased immigration at this point.

College of Physicians' Banquet.—The annual banquet of the College of Physicians of Pittsburgh was held at the Fort Pitt Hotel, May 27. The guests of honor were Dr. Noble W. Jones, Portland, Ore., who spoke on "Principles Underlying the Medical Treatment of Gastro-Intestinal Stasis"; Dr. Willia Garry Morgan, Washington, D. C., and Dr. John P. Sawyer, Cleveland, Ohio.

To Train Medical Missionaries.—The Pennsylvania Medical Missionary Society is now entering on the last year of its first quarter century. The objects of the society are to give assistance to students preparing for medical missionary work, and to arouse interest in medical missions; to establish and maintain homes for the use of missionaries or of students preparing for this work, and to obtain systematic contributions of money for these objects. The new Rest Home for missionaries at home on furlough, at Ventnor, was opened this month. The society is interdenominational in all its endeavors.

Philadelphia

Memoir to Dr George MacClellan.—A memoir of the late Dr. George MacClellan, founder of the Pennsylvania School of Anatomy and professor of artistic anatomy at the Academy of Fine Arts, was read May 28, at the meeting of the philobiblion Club, by Dr. J. Chalmers DaCosta.

Lebanon Hospital Opened.—The new Lebanon Hospital at 1728 N. Seventh St., was formally opened June 1. The new building has a capacity of thirty beds and has a well-equipped laboratory for microscopic and chemical examinations. The nurses' training school will be installed as well as a staff of six nurses.

Memorial Meeting for Dr. Moon.—A tribute to the late Dr. Robert C. Moon was paid, May 23, by an audience of largely sightless people, who crowded Witherspoon Hall. The father of the recently deceased physician had invented the Moon type system of reading for the blind and the son, an able ophthalmologist of Philadelphia, had also largely devoted his best energies to relieve these sufferers.

Personal.—Dr. James M. Anders has been appointed by Mayor Blankenburg, a member of the Board of Health to succeed Dr. Walter H. Andrus, who resigned several months ago.——Dr. S. W. Newmayer, head of the division of child hygiene, has been appointed assistant chief medical inspector in the Bureau of Health, to succeed Dr. Charles A. Groff, resigned.——Dr. Edward A. Leonard, Jr., has qualified for the position of assistant chief resident physician of the Bureau of Charities.

Plans Relief for Blockley.—To relieve overcrowding at Blockley, Director of Health and Charities Harte proposes to use at once a portion of the $60,000 available for a power plant in the new Home for the Indigent, at Holmesburg, in such a manner as to open the institution at an early date. With the installation of a temporary plant and the expenditure of possibly $15,000 on beds and other furnishings, 1,000 men from Blockley can be transferred to the new institution.

Agreement on Bodies.—The controversy between the coroner's office and the State Anatomical Board over the disposition of unclaimed bodies has been tentatively settled by an agreement to take the affair to court and abide by the decision. A test case will be made of the first unclaimed body that comes to the department. The state board made a concession in the case of bodies on which post-mortem examinations have been made, for in the past the board has refused to accept them.

Demonstration by State Board of Health.—The meeting of the Philadelphia County Medical Society on May 27 was devoted to an exposition of the work of the State Department of Health. Beginning at noon, there was an exhibit in Cadwalader Hall of relief maps, models and charts of the work of the department. Demonstrators were in attendance, and literature regarding the subjects was presented to each visitor. In the evening the topic announced was "An Evening by the Department of Health, Commonwealth of Pennsylvania." Dr. Samuel G. Dixon, state health officer, delivered an address, and others spoke on "Vital Statistics," "Medical Division," "County Medical Work," "Typhoid Fever," "Engineering Division," "Laboratories," "Dispensaries," "Sanatoria," "Philanthropic Cooperation in State Tuberculosis Work" and "Experiences as an Intern in a State Tuberculosis Camp."

For an Effective Housing Bureau.—Under the supreme court decree in the housing and sanitation suit that a new division of the Department of Health and Charities could be established only by the will of the councils irrespective of the act of assembly authorizing it, Dr. Richard H. Harte, director of health and charities, on May 25, reinstated the three heads of the old divisions deposed by Assistant Director Wilson several months ago. The men reinstated were the head of the division of sanitary inspection, head of the division of house drainage and head of the division of tenement house inspection. Dr. Harte has announced his determination to cooperate with councils in making the new division of housing and sanitation of the Department of Health and Charities, a most effective branch of the city government, and he will endeavor to prevail on councils to authorize the establishment of this new division and if councils are not willing to provide money for all the hundred inspectors authorized by the act of assembly, the department will do its best with the members of inspection the councils shall allow.

SOUTH DAKOTA

Personal.—Dr. Burtis T. Green, Brookings, sails for Europe June 13.

New Officers for State Association.—At the thirty-third annual meeting of the South Dakota State Medical Association held at Watertown, May 26-28, the following officers were elected for the ensuing year: president, Dr. Fred Treon, Chamberlain; vice-presidents, Drs. James B. Vaughan, Castlewood, and Francis M. Crain, Redfield; secretary-treasurer, Dr. Robert D. Alway, Aberdeen; delegate to American Medical Association, Dr. Edmund D. Putnam, Sioux Falls; alternate, Dr. Silas M. Hohf, Yankton. Sioux Falls was selected as the place of the next meeting.

WASHINGTON

Personal.—Dr. Irving Conditt, city physician of Seattle, has been appointed surgeon of the U. S. S. *McArthur*, engaged in coast and geodetic survey.

Rat-Proofing Ordinance.—The city council of Seattle has approved an ordinance, effective May 24, 1914, requiring the rat-proofing of all new buildings and buildings undergoing extensive repairs. The enforcement of the ordinance primarily devolves on the superintendent of buildings who will work in cooperation with the U. S. Public Health Service. Under date of May 26 the finding of a plague-infected rat was reported from Seattle.

GENERAL

Correction.—Dr. R. G. Hoskins calls attention to the fact that there is an inaccuracy in a statement made in his article, page 1803 of this issue, and that the statement beginning "Weed of Johns Hopkins has recently," etc., together with the reference should be deleted.

Military Surgeons Meeting.—The Association of Military Surgeons of the United States will hold its twenty-third annual meeting in Cincinnati, September 29-30 and October 1-2. Brigadier General Charles Adams, M. C., Ill. N. G. (retired), Chicago, is president of the association, and Dr. Charles A. Lee Reed, Cincinnati, is chairman of the committee on arrangements.

Bacteriological Standards for Milk.—*Public Health Reports*, May 15, contains a partial list of cities and towns in the United States of 10,000 population and over which have adopted a bacteriologic standard of purity for milk and cream. The total population of the cities included in the table given in the report is 21,043,325. The maximum number of bacteria allowed per cubic centimeter ranges from 1,500,000 for cream and 1,000,000 for raw milk, down to 10,000.

Gynecologists Elect Officers.—At the thirty-ninth annual meeting of the American Gynecological Society, held at Boston, May 19-21, the following officers were elected: president, Dr. Thomas J. Watkins, Chicago; vice-presidents, Drs. Frank F. Simpson, Pittsburgh, and Howard C. Taylor, New York City; secretary, Dr. Leroy Broun, New York City (reelected), and treasurer, Dr. J. Wesley Bovee, Washington, D. C. The place of meeting for next year was not decided.

American Pediatric Society Election.—At its twenty-sixth annual meeting held in Stockbridge, Mass., May 25-27, the following officers were elected: president, Dr. George N. Acker, Washington, D. C.; vice-president, Dr. Henry L. Coit, Newark, N. J.; secretary, Dr. Samuel S. Adams, Washington, D. C. (reelected); treasurer, Dr. Charles H. Dunn, Boston, Mass. (reelected); delegate to the Association of American Physicians, Dr. Abraham Jacobi, New York. The next meeting will be held in Cape May, May 25-27, 1915.

German Neurologist in America. — Professor Otfrid Foerster, neurologist of Breslau, Germany, is now visiting the United States. He was a guest of several Chicago physicians during the week of May 23-30, and has now gone to the Rocky Mountain states. Professor Foerster will speak in the Section on Nervous and Mental Diseases of the American Medical Association in Atlantic City, June 24, his subject being "The Borders of the Areas of Anesthesia, Analgesia and Thermo-Anesthesia in Lesions at the Different Levels of the Sensory Tract."

Physicians' Study Travels.—The first annual tour of the American Society of Physicians' Study Travels includes the cities and health resorts in and between Philadelphia, Canada and New England. The number is limited to 125 persons, and the tour will start from Philadelphia, June 26, immediately after the meeting of the American Medical Association in Atlantic City, and will return to Philadelphia July 16. The expense per individual, including all charges en route, will be $180. Those interested should communicate with the secretary, Dr. Albert Bernheim, 1225 Spruce Street, Philadelphia.

FOREIGN

Leprosy in Norway.—According to a table in Public Health Reports, May 29, from 1906 to 1910 the number of deaths from leprosy in Norway was 211. Of these 128 were males and 83 females. At the end of 1910 there were in that country 323 persons suffering from the disease, of whom 137 were males and 186 females.

Physicians in China.—In the part of China around the Shansi Mission of the American Board of Commissioners for Foreign Missions, there is a territory with only seven physicians to fourteen million people. There are many out-stations where patients are cared for, and several opium refuges are governed from Fenchow-fu. The board is continually calling for young physicians, but the response to the service has not been what it deserves.

Deaths in the Profession Abroad.—P. H. Eijkman, Scheveningen, the Netherlands, aged 51. Indefatigable in his efforts to promote international scientific intercourse, he founded in 1910 at the Hague the *Bureau préliminaire de la fondation pour l'internationalisme*. It listed then 192 different international organizations for medicine or the natural sciences.——I. Wickman, instructor in nervous diseases at the University of Stockholm and an early authority on poliomyelitis, aged 37.——D. Biondi, professor of surgery at the University of Siena.

Responsibility for Outer Garments Left in Waiting-Room.—The supreme court at Rome, Italy, recently decided a case on appeal in favor of a physician who was sued for damages as a patient's overcoat, left in the anteroom, had been stolen while he was with the doctor. The latter proved that the outer door was always locked and an attendant kept to open the door. He was considered to have thus acted "like a father" and the plaintiff's claim was not allowed. The judge emphasized that the responsibility of the physician in respect to office patients is not like that of a hotel-keeper for the belongings of his guests. The physician is responsible only *en bon père de famillie* for the outer garments, umbrellas and canes left in the anteroom to the office, and this responsibility does not extend to traveling bags. The *Semaine Médicale* in commenting on this case compares the codes of various countries, all sustaining the equity of the decision.

CANADA

Budget for Health Department.—The health committee of Winnipeg has asked an appropriation of $306,561.95 for the fiscal year. The chief items are for scavenger service, $140,064.40; salaries, $70,910.40; and operating and maintaining crematories, $67,627.15.

New Officers.—Toronto Academy of Medicine, May 5: president, Dr. Harry B. Anderson; secretary, Dr. Jabez H. Elliot.——Ontario Health Convention in Toronto, May 8: president, Dr. William R. Hall, Chatham; vice-president, Dr. Angus W. McPherson, Peterborough.

Provincial Association Meeting.—At the thirty-fourth annual meeting of the Ontario Medical Association, held in Toronto, the expected divulsion of the provincial from affiliation with the Canadian Medical Association was sidetracked, the matter being referred to a special committee of nine, including two who favored withdrawal, two who were satisfied with present conditions, and five members supposedly disinterested. The address in surgery was delivered by Dr. John M. T. Finney, Baltimore, on "The Cause of Failure in Operations for Choleliathisis"; that in obstetrics by Prof. B. P. Watson, Toronto, who gave a historical review of "Forceps, Their Proper Use, Etc."; and that in medicine by Dr. Emanuel Libman, New York City, on "Subacute Bacterial Endocarditis." The following officers were elected; president, Dr. David J. Gibb Wishart, Toronto; first vice-president, Dr. Adam T. Shillington, Ottawa; secretary, Dr.

Frederick A. Clarkson, Toronto, reelected; and treasurer, Dr. Jabez H. Elliott, Toronto, reelected.

CANAL ZONE

Treatment of Employees.—Circular 618, dated April 1, governs the treatment of employees in hospital and elsewhere. Employees will receive free treatment in the hospitals in case of injury or disease other than alcoholism or venereal disease. They will be admitted only on request of a physician of the health department or the head of a department or division to which the employee belongs. A charge of $1 for each visit will be made by each physician of the health department to an employee at his home or quarters, except that no charge will be made for the first visit if the employee is unable to go to the hospital or dispensary. Employees living with their families may be treated free at home or in quarters if, in the opinion of the physician, they cannot go to the dispensary or hospital. Employees treated in special wards shall be charged $1 a day and for a private room shall be charged $1.50 per day. Special nurses will be charged for at the rate of $3 per day and a special servant at $1. Members of the families of employees may consult free of charge any physician of the health department at the hospital or dispensary. Other regulations in regard to charges in hospital for employees on different rates of pay, for Army, Navy and marine services, for the diplomatic and consular corps and for the employees of contractors are also contained in the circular.

LONDON LETTER

London, May 22, 1914.

Deaths Due to Salvarsan

Although it is possible to administer salvarsan in a large number of cases without any ill results being observed, the occurrence of fatalities from time to time proves the truth of the saying of the leading French syphilographer, Gaucher, that it is "a treacherous remedy." All the explanations, brought forward one after another with no little ingenuity by Ehrlich and his followers, have broken down, and after much resistance the fact has to be admitted that under circumstances which are not understood, salvarsan may produce the nervous form of arsenical poisoning with fatal result. The contention that fatalities were due either to errors of technic or to administration in cases in which the drug was contraindicated by organic disease of the nervous or vascular system has been abundantly disproved. Most of the fatalities have occurred in young and vigorous patients, who, except for syphilis, were quite healthy. In England the number of reported deaths is small, but as in other countries, many are never published. A short time ago a man in Bradford suffering from anthrax was injected and died, as was admitted at the inquest, from arsenical poisoning. Two other deaths have recently been reported. In one a debilitated man aged 25, a subject of syphilitic ulceration of the palate and larynx, was treated in Dublin. The heart and kidneys were apparently normal. An intravenous injection of 0.4 gm. of salvarsan was followed by two rigors and vomiting. After recovering from these symptoms he collapsed and died twenty-five hours after the injection. At the necropsy the heart and kidneys were found normal. In the other case, a young man, aged 23, in the secondary stage of syphilis and otherwise apparently healthy, received an intravenous injection of 0.6 gm. at St. Mary's Hospital and the same dose a fortnight later at Guy's Hospital. Three days after the second injection coma and convulsions occurred and the patient died. The necropsy showed visceral hemorrhages and hyperemia of the brain. The heart, liver and kidneys were normal. At the inquest Dr. Womack, the pathologist, gave evidence that death was due to acute arsenical poisoning in a person with idiosyncrasy to salvarsan. He referred to the case of an American who died in London after a second injection under similar circumstances. Another case of the same kind has occurred in Manchester. Ehrlich's attention having been called to the fatality at Guy's Hospital, he wrote a letter to the *British Medical Journal* stating that he associates the nervous phenomena after salvarsan injection, particularly hemorrhagic encephalitis, with the destruction of spirochetes in the capillaries of the brain and the liberation of the endotoxins. The vascular system, altered by the endotoxins, is not oversensitive to salvarsan as such, for otherwise the symptoms would appear immediately after the second injection instead of two days later. The delay indicates that a derivative of salvarsan has come into action which he believes is an oxidation product. A third factor which also comes into play is a deficiency of epinephrin, favoring dilatation of vessels. He therefore suggests that epinephrin may be of use in overcoming "this scourge of salvarsan therapy." To this complicated explanation the reply may be made that it is almost entirely hypothetic and not sustained by evidence. Moreover, if it be true that salvarsan causes a dangerous liberation of endotoxin, this is surely an argument against its use. But that the symptoms are due to arsenical poisoning, pure and simple, is shown by their occurrence when salvarsan is administered in other diseases than syphilis and by their occurrence in patients who, having suffered from the disease and free from all manifestation of it, have shown toxic symptoms after injections administered as a precautionary measure. The profession seems to be so hypnotized by the well-earned reputation of a great pathologist as to be incapable of grasping the obvious with regard to these salvarsan fatalities.

PARIS LETTER

Paris, May 15, 1914.

Personal

May 12, the Académie de médecine elected two national associate members, Dr. Jules Boeckel of Strassburg and Dr. Albert Calmette of Lille (The Journal, May 2, 1914, p. 1414). Mention of Dr. Jules Boeckel was made recently on the occasion of his departure from the civil hospital of Strassburg and his nomination as honorary member of the Société de chirurgie de Paris. Dr. Albert Calmette, who was born at Nice in 1863, when colonial and marine physician in 1890, founded at Saigon the first Pasteur institute outside of France. After his return to France, he became one of the most valued pupils of Pasteur, who in 1895 entrusted him with the task of organizing the institute of Lille, which he continues to direct. He has particularly studied the problems of plague and snake-poison serotherapy. He has given particular attention to the study of tuberculosis and has introduced antituberculosis dispensaries, which are generally preferred in France to tuberculosis sanatoriums.

Has a Military Officer the Right to Operate?

The very important question of unauthorized practice of surgery by military officers is now receiving the attention of the medical profession. In some of the frontier military posts of our colonies, there are no military physicians. The heads of such posts have been instructed by physicians in the elements of hygiene and medicine but not in surgery. In serious cases, sick or wounded men have been transported with all possible care to the nearest military infirmary or hospital. This prudent caution was not observed in a recent case. Dr. Granjux reports that in a post of southern Algeria, an officer amputated the leg of a seriously wounded brigadier. The fact was reported to the minister of war, who sent to the commander of the army corps a letter of congratulations in which he requested him to invite the director of the service of hygiene to prepare for the use of the southern posts a notice pointing out the superiority of conservative surgery and the means of practicing it even under unfavorable circumstances, thereby permitting the patient to await the arrival of a physician and avoid amputation. Dr. Granjux points out the great danger of such operations made by officers who have the best intentions, but necessarily lack the requisite skill, and observes that the minister of war, while ostensibly congratulating the amateur surgeon, conveys an implied reproof which is not made direct for fear of making trouble for him and for the government.

Nurses and Antityphoid Vaccination

An odd conflict has just arisen between the administration of the Public Charities and the nurses. The Public Charities has recently decided to vaccinate its nurses with the serums of Vincent or Chantemesse. The nurses' union (*syndicat*) has protested against the use of these serums, which it says have killed several nurses. The *syndicat* declares that the serum caused the death of two female nurses, one at the Beaujon Hospital and the other at the Necker Hospital, and that two other female nurses, one at the Lariboisière and the other at the Charité, have been made seriously ill. M. Mesureur, director of the Public Charities, replies that the deaths attributed to the antityphoid serum are really not due to the vaccination. The nurse at the Beaujon Hospital had received two inoculations and was not protected. She died of typhoid fever, which broke out a month after the last inoculation. The nurse at the Necker Hospital died also of typhoid fever, during the course of which three therapeutic injections had been made. The case, therefore, has no bearing on preventive vaccination.

BERLIN LETTER

Berlin, May 15, 1914

Annual Meeting of the German Surgical Society

(*Continued from page 1674*)

THYROID TRANSPLANTATION

Kocher of Bern reported the permanent results of thyroid transplantation in man. In animal experiments it was possible to transplant the thyroid gland and its vessels, but only in case of autotransplantation, which is of no significance for the present question. No success has hitherto been obtained by means of homotransplantation. Probably the question also will be solved by some method of weakening the immunity of the recipient and increasing the vigor of the transplant. For the prevention of tetany, when it was not possible at the operation to preserve the epithelial bodies, Kocher immediately reimplanted these. Also for the prevention of cachexia strumipriva, when for any reason the entire thyroid had to be removed, he reimplanted a portion of the healthy tissue. In cases of cretinism, in which the patient's own thyroid is not available, the attempt must be made, if necessary, to obtain material from relatives. The successful cases which Kocher has to show have not been controlled by histologic examination because he does not regard himself as justified in removing again a gland that has once been implanted.

He plants the graft in the bone-marrow, the peritoneal cavity, the preperitoneal tissue, the omentum or, following the method of Payr, in the spleen, which seems to him especially suitable for the purpose. In ninety-three cases he had eighteen favorable results; some of the patients had previously been taking thyroid preparations internally. It should be noted further that there are cases in which these preparations are tolerated only after a thyroid-grafting operation. In cases of cretinism, he had good results in twenty-one cases. For transplantation, he prefers the thyroid from a patient with exophthalmic goiter which is in the stage of hyperthyroidism. For good results, a single transplantation is not sufficient; new material must constantly be supplied either by the administration of thyroid preparations or by multiple transplantations. In cretins, moreover, preliminary long-continued administration of the thyroid is necessary for success with the transplantation.

Eiselsberg of Vienna reported a case of myxedema in which an improvement was secured by repeated transplantation; but after a certain interval a new transplantation always became necessary. He has succeeded in transplanting the epithelial bodies but with only a temporary effect.

In a case of congenital lack of the thyroid, with complete idiocy, which Payr of Leipsic reported, an astonishing and unprecedented improvement lasting for two years and four months was achieved by transplanting a large piece of the mother's thyroid; but later a complete retrogression occurred. Three other transplantations gave satisfactory results. Payr said that in cases of acquired imperfect function of the thyroid, after failure of thyroid treatment, transplantation may be undertaken with good prospects of success. The causes for failure of transplantation in congenital cretins are partly the severe disturbances of development in the infantile brain which are present at the same time and partly the necessity of taking the graft from another individual. For an early diagnosis, Payr recommends a small exploratory incision in the neck. In this place, then, the transplant itself may be inserted or it may be embedded in the capsule of the thymus. There are many differences between the mode of action of transplanted thyroid tissue and thyroid treatment with the dried gland.

Stieda reported three cases of pronounced myxedema with more or less evident idiocy, in an 8-year-old boy, his sister of 7 and an 8-year-old girl. After the implantation of thyroid tissue, a pronounced improvement was evident in all three cases. At first it showed rapid progress and then became stationary. A disappearance of the myxedematous changes in the skin could be demonstrated as well as a growth in height and an evident increase in intelligence. Two of the children are still under observation, but the third died nearly four years later, after an operation for tuberculosis. At the necropsy this case, which had been especially improved, showed that microscopically the thyroid tissue implanted in the head of the tibia was no longer recognizable but, on the other hand, a small thyroid gland was found which had escaped discovery during life. Aside from the grafting operation, the children received no other treatment.

Schaack of St. Petersburg has repeatedly undertaken the implantation of the thyroid in the bone-marrow or in the subcutaneous adipose tissue and has seen improvement which, as a rule, however, lasted only two months. He has never observed a permanent cure.

Müller of Rostock implanted the thyroid in the bone-marrow of the tibia in one cretin, with merely temporary improvement. He later opened up the tibia again but found nothing left of the thyroid gland except a few isolated cells.

Enderlen of Wurzburg stated his conviction based on wide experience that the thyroid implanted in this way will not long maintain its life.

THYROID CYSTS

Riedel of Jena reported on the dangers and disturbances from cysts of the thyroid. Of 1,070 patients with goiter who were operated on, 148 had large isolated cysts. The latter often develop even in childhood and sometimes hinder the growth of the trachea to a remarkable degree (11 cases), and relatively often sink down behind the first rib or the sternum (21 cases). Exophthalmic goiter seldom occurs in a thyroid with cysts (6 cases); hyperthyroidism is more frequent (12 cases). If such patients are operated on under general anesthesia, the pulse in some instances sinks to the normal and remains thereafter slow; in others it becomes rapid again after subsidence of the anesthesia and the same symptom is seen in solid goiter with exophthalmic goiter.

In these cases there is a paralysis of the subcortical center of the sympathetic in the subthalamic region which, in turn, has relations with the posterior part of the frontal lobe of the brain. This center, that in exophthalmic goiter or in hyperthyroidism is primarily or secondarily stimulated, is paralyzed by chloroform. The primary factor of exophthalmic goiter, however, is often the disease of the thyroid shown by the morbid anatomy. If the greater part of the thyroid is removed by an early operation, the exophthalmic goiter also rapidly disappears. If the thyroid grows again, the exophthalmic goiter immediately returns, but it disappears again as soon as the newly grown thyroid is removed, even if it is only very small, for it requires the influx of only a minute amount of the juice of the thyroid into the blood to stimulate the sympathetic center. In chronic cases this center remains irritated for a long time, even for years, in spite of the removal of the greater part of the goiter or the thyroid cysts.

Effusions of blood easily occur into thyroid cysts, and still more frequently inflammatory changes occur (mostly circumscribed and harmless). Of three women with subacute attacks, two died of pericarditis or endocarditis, and one of pneumonia, although pus was found in the cysts in only one of the cases and serum in two. In one patient the inflamed cyst was probably tuberculous. Malignant degeneration of the cysts is very unfortunate. In two cases, carcinoma of the esophagus developed opposite old, hard, calcified substernal cysts, so that a causal connection between the two must be considered. Tough-walled cysts permit easy enucleation; sometimes a severe hemorrhage from the thyroid tissue, especially from the capsule, necessitates the almost complete removal of that half of the goiter. For the extirpation of the subcostal cysts, a long curved incision is necessary; the goiter separated at the isthmus must be loosened from the trachea and also higher up and so made movable, and then the subcostal tumor can easily be pushed up and drawn out of the chest. An enucleation of a subcostal cyst is dangerous on account of possible hemorrhage. The capsule of the goiter should be removed with it.

THE THYMUS AS A FACTOR IN EXOPHTHALMIC GOITER

Von Haberer of Innsbruck communicated his results from thymectomy in exophthalmic goiter and goiter. He has now a record of sixteen cases of resection of the thymus. In fourteen cases the thyroid and the thymus were both removed; in two cases the thymus alone was removed, and one patient was cured. In eight cases there was exophthalmic goiter with hyperplasia of the thymus, while in seven there was simple goiter. The question whether in certain cases the thymus and in others the thyroid should be attacked operatively, has not yet been settled. There are severe cases of exophthalmic goiter without hyperplasia of the thymus. Still, he believes that in all cases of exophthalmic goiter and goiter one should determine whether or not the thymus is unduly large and remove it in case of hyperplasia.

According to Albert Kocher of Bern, the experience in Bern is not the same. A participation of the thymus was found only in very rare cases. If it was discovered at operation its removal did not seem to be indicated, according to the experience there, as very frequently, after the removal of the thyroid, the thymus became reduced in size. The hyperplasia of the thymus seemed to Kocher to be a regional and familial affection. He called attention further to the connection between hyperplasia of the thymus and hypoplasia of the adrenals. In two cases of thymectomy one patient was cured.

In the discussion Klose of Frankfort referred the contradiction in the experience of the two previous speakers and himself to regional conditions, and briefly described his observations.

Schloffer of Prague regards thymectomy as not always a very easy operation. In one of his cases it proved peculiarly complicated. In conclusion, von Haberer gave his opinion that thymectomy in case of hyperplasia of the thymus presented no difficulties.

PUNCTURE OF THE CORPUS CALLOSUM

Stieda reported the results which had been obtained at the Halle clinic with puncture of the corpus callosum in genuine epilepsy and idiocy. One case of jacksonian epilepsy with a congested papilla was of special interest in that the attacks gradually ceased completely with no further signs of choked disk to date after four and one-half years, while in most cases of epilepsy there is only a temporary cessation but a decided weakening of the attacks.

An earlier operation will surely give better results, as the puncture of the corpus callosum is a minor operation, quickly made and not dangerous. It can be done without injuring the brain and without shock, and under local anesthesia. In comparison with the other methods of operating for genuine epilepsy, puncture of the corpus callosum is not only a competitor but probably deserves preference.

Hildebrand of Berlin has performed puncture of the corpus callosum twice and was not very much pleased with the results. He does not regard the operation as so very insignificant, as it is easy to injure a vein and produce dangerous bleeding.

Tilmann of Cologne in case of epilepsy first determines by a lumbar puncture whether there is increased pressure. If positive, he makes a puncture of the ventricle; if he also finds here an increased pressure, he punctures the corpus callosum.

Lossen of Cologne applied puncture of the corpus callosum in three cases of hydrocephalus without results. In his opinion, the operation must be made in several places in order to secure success. He recommends puncture of the cisterna magna, but in addition he makes a puncture of the corpus callosum and of the ventricle.

Schloffer of Prague has performed puncture of the corpus callosum about twenty times and observed a temporary unilateral paralysis following it in one case.

DEEP INJECTIONS OF ALCOHOL FOR NEURALGIA

Härtel has treated twenty-seven cases of trigeminus neuralgia according to his method with injections of alcohol into the gasserian ganglion with immediate relief in every instance with the exception of three hysterics. In relapses freedom from pain could always be secured again by repeating the injection. The method is superior to all operative and conservative peripheral methods and is calculated materially to reduce the number of intracranial operations.

GANGLIECTOMY FOR OCCIPITAL NEURALGIA

Oehlecker of Hamburg-Eppendorf reported on a new operation in the field of nervous diseases, namely, the extirpation of the second spinal ganglion in certain forms of occipital neuralgia. One patient had unbearable neuralgia recurring after a peripheral operation on the occipitalis major nerve and was completely cured by Oehlecker's operation. In another, the occipital neuralgia developed after injury of the anterior branch of the third cervical nerve, and the occipitalis major was extirpated together with the ganglion. The same operation was performed on a third patient in whose case it was assumed that the cause of the neuralgia, which came on after an operation for carcinoma of the tonsil and base of the tongue, was more centrally situated.

SURGICAL MEASURES IN PULMONARY TUBERCULOSIS

Friedrich of Königsberg reported on the systematic surgical treatment of pulmonary tuberculosis by removal of ribs and induced operative paralysis of the diaphragm, etc., by cutting the phrenic and intercostal nerves. The performance of the operation in two stages, the use of local anesthesia and the limitation of the extent of the resections in suitable cases have gradually led to the extension of the indications even to cases of medium severity. He was not ready to give a final judgment on this operative paralysis of the phrenic nerve, but he took a very conservative and skeptical position.

Sauerbruch of Zurich described the indications for operative treatment. Fresh incipient cases are not suited for operation. Those cases, however, in which an active progressive process is present in both lungs are to be excluded. The cases best suited to the operation are those of a fibrous character. Of 122 patients operated on by an extrapleural plastic operation, 2 have died, 27 have grown worse, 65 remarkably improved and 24 are cured. One can speak of an actual cure only after the lapse of two years. Sauerbruch applies the same method of operation as Friedrich and is, in general, an opponent of using a filling.

Wilms of Heidelberg considers the use of a filling under definite indications as justified and curative. In addition to this, he is applying resection more and more. He has operated in 21 cases, with 1 death as a result of the operation and 2 occurring later. Four patients are cured, 7 remarkably improved and 5 others improved. His *Pfeilerresektion* technic cuts the ribs close to the spine and sternum.

BUDAPEST LETTER

Budapest, May 4, 1914.

Birth and Death Statistics of Europe

The *Hungarian Statistical Bureau publishes the following data of the population movement of Europe from 1902 to 1911.* The increase of population in percentage is as follows:

	Per Cent.
Russia	18.81
Servia	15.83
Roumania	14.38
Bulgaria	14.12
Germany	13.64
Holland	12.79
Switzerland	11.65
Denmark	9.52
Belgium	8.61
England	8.30
Austria-Hungary	7.78
Sweden	6.99
Norway	6.69
Italy	6.05
Portugal	5.90
Spain	4.70
France	1.42

According to these statistics the Slavs themselves rank foremost and the Slavonic nations occupy the second place. From a geographic point of view the Balkan people are first, while the so-called *Kulturstaaten* (cultured nations) which lead in art, technical sciences, politics, etc., rank last.

The mortality statistics show quite a different picture. Here, naturally enough, the cultured states rank first. Taking ten thousand inhabitants as a basis, the rate of mortality from 1902 to 1912 is as follows:

Russia	298
Roumania	256
Hungary	294
Servia	236
Austria	232
Bulgaria	231
Spain	224
Italy	215
France	193
Germany	184
Finland	178
Ireland	173
Belgium	164
Scotland	163
England	152
Switzerland	150
Holland	149
Sweden	147
Norway	140
Denmark	140

Damages Paid by An Insurance Company to a Doctor for Libel

A well-known foreign insurance company working in Hungary circulated a letter to all the insurance companies with the information that it had withdrawn its confidence from a certain doctor, because his urine examinations were unreliable. As the doctor in question had been the medical adviser for several insurance companies, a large part of his livelihood has been derived from the examination fees, and considerable material loss was involved. On inquiry for the reason of his dismissal, the letters from the directors, containing instructions to dismiss him because he was an "unreliable doctor" were shown to him. The doctor sought the advice of the medical association, and was advised to sue the company for libel and damages. The question of libel has not been decided, as yet, but damages of $2,000 (10,000 kronen) have already been awarded him.

Marriages

James Lyman Whitney, M.D., San Francisco, to Miss Elizabeth Goodrich of Saratoga, Cal., May 14.

Joseph H. Williams, M.D., Webster Groves, Mo., to Miss Maud North of Gray Summit, Mo., May 28.

Robert Clayton Thackeray, M.D., Racine, Wis., to Miss Marion Browne, at Evanston, Ill., May 16.

George Washington Gault, M.D., to Miss Mabel E. Sellers, both of Marysville, Pa., May 1.

Louis K. Guggenheim, M.D., to Miss Maude Hellman, both of St. Louis, May 21.

Deaths

Ferdinand Eugene Daniel, M.D. editor of the *"Red Back" Texas Medical Journal;* and one of the best-known practitioners of the Southwest; died at his home in Austin, Tex., May 14, aged 74. He was born in Hicksford, Va., July 18, 1839, and was graduated from the New Orleans School of Medicine in 1862. Before his graduation, he had been a private of the line in the confederate service, and immediately after his graduation he reentered the service as surgeon. He also served during 1863 as Judge Advocate with the Army of the Tennessee, as secretary of the Army Board of Medical Examiners in General Bragg's division; and also on the staff of Lieut. Gen. Hardee. He was for many years a member of the State Medical Association of Texas, and was its first president in 1904, under the reorganization. Dr. Daniel was one of the founders of the first Texas medical college and a member of its faculty in 1867 and 1868. He founded the *Texas Courier Record of Medicine*, and established the *"Red Back" Texas Medical Journal* in 1885. Dr. Daniel was widely known as a writer, not only of polemics, but on scientific subjects.

James Gillespie Hunt, M.D. Jefferson Medical College, 1871; a member of the Medical Society of the State of New York; formerly president of the Northern Branch of the New York State Medical Association and Oneida County Medical Society; five years commissioner of the State Board of Health; local surgeon to the New York, Ontario and Western; Delaware, Lackawanna and Western, and West Shore Railways; a member of the staff of the Faxton Hospital, Utica, N. Y.; for three terms coroner of Oneida County; and for twenty years health officer of Utica; formerly assistant surgeon to the Forty-Fourth Separate Company, N. G., S. N. Y.; died at his home, May 17, from cerebral hemorrhage, aged 68.

John E. Brady, M.D. University of Buffalo, N. Y., 1860; a Fellow of the American Medical Association since 1866; a charter member of the Michigan State Medical Society; and for some time president of the Grand Rapids Medical and Surgical Society; coroner of Kent County, Mich., for several terms; surgeon to Butterworth and the Union Benevolent Association hospitals, Grand Rapids; formerly professor of physical diagnosis, and diseases of the chest, heart and lungs in Grand Rapids Medical College; assistant surgeon of the Forty-Fifth Illinois Volunteer Infantry during the Civil War; died at his home in Grand Rapids, May 18, aged 77.

James McDonald Keller, M.D. University of Louisville, Ky., 1852; medical director in the confederate service throughout the Civil War; once professor in Louisville Medical College and Kentucky School of Medicine, president of the Board of Education of Louisville, and president of the Kentucky State Medical Association; for forty years a practitioner of Hot Springs, Ark.; at one time president of the Arkansas Medical Society, and an honorary member of the Hot Springs-Garland County Medical Society; died at his home in Hot Springs, May 27, aged 82.

Edward Marsh, M.D. Bellevue Hospital Medical College, 1875; of Esperance, N. Y.; a member of the Medical Society of the State of New York; and one of the best-known practitioners of the Schoharie Valley; was struck by a freight train at Central Bridge, N. Y., May 19, and died from his injuries a few hours later in St. Peter's Hospital, Albany, aged 60.

John P. Webster, M.D. Hahnemann Medical College, Chicago, 1883; Harvey Medical College, Chicago, 1896; a Fellow of the American Medical Association; a member of the Mississippi Valley Medical Association, American Association of Railway Surgeons, and Erie Railroad Surgeons' Association; chief surgeon of the Chicago and Western Indiana Railway; local surgeon to the Erie and Monon systems; surgeon to the Englewood Hospital and St. Ann's Hospital Sanatorium; died at his winter home in Pasadena, Cal., May 24, aged 62.

Joseph Edouard Adolphe Lanouette, M.D. University of Bishop's College, Montreal, 1872; a member of the New Hampshire Medical Society and American Public Health Association; formerly president of the Manchester, N. H., Board of Health; and of the New Hampshire State French Medical Society; consulting surgeon to Sacred Heart Hospital, Manchester; surgeon of the Ninety-Second Battalion, Canadian Militia, from 1873 to 1881; died at his home in Manchester, May 16, from cerebral hemorrhage, aged 64.

Christopher Hamilton Tebault, M.D. Tulane University, New Orleans, 1862; surgeon of the Twenty-First Louisiana and Tenth South Carolina Infantry, C. S. A., during the Civil War; for two years teacher of anatomy in his Alma Mater; a member of the staff of Charity Hospital, New Orleans, for many years; surgeon-general of the United Confederate Veterans, for twenty-five years; one of the best-known practitioners of New Orleans; died at his home in that city, May 24, aged 74.

Brooks Ford Beebe, M.D. Medical College of Ohio, Cincinnati, 1880; a Fellow of the American Medical Association; a member of the Cincinnati Academy of Medicine, American Medical-Psychological Association, Mississippi Valley Medical Association and Ohio Valley Medical Society; for many years professor of mental diseases in his Alma Mater; died at his home in Cincinnati, May 29, from cerebral hemorrhage, aged 63.

John Forrest Dillon, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1850; who, after six months of practice, took up the study of law, and was judge of the seventh judicial district, and later a justice of the supreme court, New York; and professor of real estate and equity jurisprudence in Columbia University; died at the home of his daughter-in-law in New York City, May 5, aged 82.

William James Dugan, M.D. Jefferson Medical College, 1896; a member of the Medical Society of the State of Pennsylvania; professor of electrotherapeutics in his Alma Mater, and consulting neurologist to the Jefferson Hospital; bacteriologist to the Maigner Laboratory of Original Research, and Pepper Laboratory of the University of Pennsylvania; died at his home in Philadelphia, May 20, aged 45.

Murdoch Alexander Lindsay, M.D. University of Edinburgh, Scotland, 1908; professor of pathology and bacteriology in Dalhousie University, Halifax, N. S.; a pathologist in the employ of the Nova Scotian government; was one of the passengers lost by the sinking of the steamer *Empress of Ireland*, after collision in the St. Lawrence River, May 29.

John William Dowling, M.D. New York Homeopathic Medical College New York City, 1886; professor of medicine and secretary of the faculty of his Alma Mater; attending physician to the Flower Hospital, New York City; died in Middletown, N. Y., May 11, from cerebral hemorrhage, aged 49.

Jephtha C. Clark, M.D. New York Homeopathic Medical College, New York City, 1885; for twenty-seven years a practitioner of Andover, N. J.; for several years a member of the Board of Education, and coroner of Sussex County; died at his home, May 16, from cerebral hemorrhage, aged 54.

Louis Hartnagel Redon, M.D. McGill University, Montreal, 1901; of Seattle, Wash.; a Fellow of the American Medical Association, aged 37; who was found unconscious, in an alley, May 10, having apparently been injured by an automobile; died in a hospital in Seattle, May 11.

William Edward Sullivan, M.D. University of Michigan, Ann Arbor, 1912; aged 36; a member of the Louisiana State Medical Association; and a practitioner of Monroe; died in that city, May 21, from the result of injuries received when his automobile ran into the Ouachita River.

William E. Reed, M.D. College of Physicians and Surgeons, St. Joseph, Mo., 1881; for more than thirty years a practitioner of Los Angeles, Cal.; died at his home in that city, April 17, aged 67.

William C. Henry, M.D. Miami Medical College, Cincinnati, 1870; a member of the Indiana State Medical Association; and a charter member and first president of the Dearborn County Medical Society; surgeon of the Eighty-Third Indiana Volunteer Infantry during the Civil War; died at his home in Aurora, Ind., about May 20, aged 73.

Robert Bailey Nelson, M.D. Vanderbilt University, Nashville, Tenn., 1903; a member of the Tennessee State Medical Association; of Memphis; aged 33; who was injured in a collision between his automobile and a railway train near Memphis, April 15; died from the results of his injuries at the Gartly-Ramsay Hospital, Memphis, May 12.

Howard B. Gates, M.D. New York Homeopathic Medical College, New York City, 1885; a Fellow of the American Medical Association; for many years superintendent of the San Jose, (Cal.) County Hospital; and later a surgeon of Los Angeles; died in Rome, Italy, May 9, from peripheral neuritis, aged 46.

George William Goetz, M.D. University of Louisville, Ky., 1910; of McKeesport, Pa.; was found dead on the railway tracks near Hawkins Station, Pa., May 12, aged 28. It is believed that Dr. Goetz was murdered and robbed and his body thrown on the tracks to conceal the evidence of the crime.

Philip B. Housekeeper, M.D. Jefferson Medical College, 1868; a member of the Medical and Chirurgical Faculty of Maryland; and physician to the Cecil County, Md., almshouse and insane hospital; died at his home in North East, Md., May 17, from heart disease, aged 68.

Charles Frederic Wainright, M.D. Bellevue Hospital College, 1889; of New York City; from 1880 to 1902, professor of internal medicine and dean of the University Medical College, Kansas City, Mo.; died at his home in Englewood, N.J., May 7, from heart disease, aged 55.

William M. S. Curtiss, M.D. Baltimore University, 1893; a member of the Connecticut State Medical Society; in 1900 a representative from Cornwall in the General Assembly; died at his home in Bristol, Conn., May 17, from nephritis, complicated by pleurisy, aged 43.

Mason Volney Hunt, M.D. Medical College of Ohio, Cincinnati, 1874; medical director of the Liberal Life Insurance Company of Indiana, Anderson; and a member of the staff of St. John's Hospital, died at his home in Anderson, May 18, from heart disease, aged 65.

Daniel Morris Woolley, M.D. New York University, New York City, 1885; of Brooklyn; a specialist on diseases of the nose and throat; a member of the staff of King's County Hospital; died in a sanatorium in Flatbush, May 18, from carcinoma of the liver, aged 64.

William Shepard, M.D. Eclectic Medical Institute, Cincinnati, 1853; one of the founders of the Shepard Sanatorium; once a member of the legislature from Franklin County, Ohio; died at his home in Shepard, Ohio, May 15, from arteriosclerosis, aged 88.

William Crutcher, M.D. Jefferson Medical College, 1896; a Fellow of the American Medical Association; and a member of the first state board of medical examiners of Arkansas; died at his home in Pine Bluff, Ark., May 22, from pulmonary tuberculosis, aged 47.

Charles Hemsted Burbeck, M.D. Albany, N. Y., Medical College, 1859; a Fellow of the American Medical Association; a surgeon of volunteers during the Civil War; and a veteran physician of Troy, N. Y.; died at his home in that city, May 9, from pneumonia, aged 77.

Otis H. Babbitt, M.D. New York Homeopathic Medical College, New York City, 1882; a Fellow of the American Medical Association; for several years physician to the Cayuga County Jail; died at his home in Auburn, N. Y., May 8, aged 60.

James Hervey Neagle, M.D. Louisville, Ky., Medical College, 1876; a Confederate veteran, and for many years a practitioner of Portland, Ore., and Seattle, Wash.; died at his home in Seattle, May 8, from nervous breakdown, aged 70.

Henry Herbert Lee, M.D. University of Vermont, Burlington, 1881; a member of the Vermont State Medical Society; died at his home in Wells River, early in April, from carcinoma of the pancreas, aged 56.

James Alexander Ashbaugh, M.D. Trinity Medical College, Toronto, 1891; for eleven years medical health officer of Windsor, Ont.; died in the Guelph (Ont.) Sanitarium, May 10, aged 41.

Christopher John Miller, M.D. Western Reserve University, Cleveland, Ohio, 1864; for many years a practitioner of Mansfield and Richmond County, Ohio; died in the Odd Fellows' Home of Ohio, Springfield, Ohio, March 6, from senile debility, aged 80.

James D. Whitney, M.D. Cooper Medical College, San Francisco, 1863; for many years a practitioner of San Francisco, and at one time a member of the staff of Governor Waterman; died in the Vendome Hotel, San Jose, Cal., May 9.

Horatio S. Brewer, M.D. Bennett Medical College, Chicago, 1879; for twenty-five years a member of the staff of the Chicago, Milwaukee and St. Paul Railway; a veteran of the Civil War; died at his home in Chicago, May 18, aged 68.

Carl D. S. Fruh, M.D. Jefferson Medical College, 1885; at one time demonstrator of anatomy in his Alma Mater; for nearly forty years a druggist of Philadelphia; died at his home, May 13, from nephritis, aged 64.

John Brelsford House, M.D. Vanderbilt University, Nashville, Tenn., 1894; for several years health officer of Allen County, Ky.; died at his home in Scottsville, May 8, from cerebral hemorrhage, aged 49.

George Ralph Bugbee, M.D. Dartmouth Medical School, Hanover, N. H., 1872; a member of the State Medical Society of Wisconsin; died at his home in Wausau, Wis., May 14, from heart disease, aged 65.

Frank Henry Nettles, M.D. Washington University, St. Louis, 1905; a member of the Missouri State Medical Association; died at his home in Cape Girardeau, Mo., May 11, from nephritis, aged 41.

Sharon Peter Heilman, M.D. University of Pennsylvania, Philadelphia, 1900; formerly of Kittanning, Pa.; and surgeon of the Kittanning Plate Glass Company; died in Phoenix, Ariz., May 11, aged 40.

William Elmore Barr, M.D. Ohio Medical University, Columbus, 1902; formerly of London, Ohio; died at the home of his father-in-law in Columbus, Ohio, May 8, from tuberculosis, aged 36.

Lafayette Stuck, M.D. University of Michigan, Ann Arbor, 1877; for thirty-five years a practitioner of Allegan, Mich., died at his home in that city, May 13, from cerebral hemorrhage, aged 66.

Ohan Gaidzakian, M.D. University of Vermont, Burlington, 1883; also a clergyman; formerly of Boston, Mass.; died in a sanitarium at Harmon-on-the-Hudson, N. Y., recently, aged 76.

Elmer Bertly Eddy, M.D. College of Physicians and Surgeons in the City of New York, 1873; of Providence, R. I.; died at the home of his daughter in that city, May 6, aged 65.

John H. Mathieson, M.D. McGill University, Montreal, 1871; formerly a member of the Board of Aldermen of St. Mary's, Ont.; died at his home in that place, May 10, aged 70.

Julius Benson Evans, M.D. Medical College of Fort Wayne (Ind.) 1880; a veteran of the Civil War; died at his home in Ada, Ohio, February 21, aged 70.

Felix Bernard Bramlette, M.D. University of Texas, Galveston, 1908; formerly of Greenville, Texas; died at his home in Austin, Texas, May 9, aged 30.

Omar Pasha Huston, M.D. University of Michigan, Ann Arbor, 1878; fell from a loft in his barn near Coweta, Okla., May 7, and was instantly killed.

Edwin E. Williams (license, Ill., 1893); a practitioner of Streator, Ill., for fifty-one years; died at his home, May 13, from chronic nephritis, aged 77.

Samuel B. Wright, M.D. University of Nashville, Tenn., 1875; died at his home in Stanford, Ill., May 13, from carcinoma of the throat, aged 63.

Nicholson C. Washington, M.D. Washington University, St. Louis, 1867; a Confederate veteran; died at his home in St. Louis, May 6, aged 70.

R. Pinkney Blackistone, M.D. University of Maryland, Baltimore, 1849; died at his home in River Springs, Md., recently, aged 91.

T. G. Butler, M.D. Medical College of Georgia, Augusta, 1860; of Malvern, Ark.; died at Pine Bluff, Ark., April 25, aged 84.

George W. Campbell, M.D. Jefferson Medical College, 1879; died at his home in Newport, Pa., May 5, aged 68.

D. C. Reese (license, Mo., 1883), died at his home in La Belle, Mo., April 26.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

GLYCO-HEROIN, SMITH

Report of the Council on Pharmacy and Chemistry

The following report was submitted to the Council by a referee and publication authorized.

W. A. Puckner, Secretary.

Glyco-Heroin Smith is marketed in a showy "patent-medicine" type of package, the label on which announces the presence of ½ grain of heroin to the fluidounce and admits the presence of 35 per cent. alcohol, an active ingredient that is not discussed in any way in the literature sent out by the manufacturer.

The composition of Glyco-Heroin Smith is given as follows: "Each teaspoonful represents: Heroin 1/16 grain. White Pine Bark 3½ grains. Ammonium Hypophosphite 3 grains, Balsam Tolu ¼ grain. Hyoscyamus 1 grain. Glycerin Q. S." The alcohol is not mentioned in the formula.

The advertising matter says of the merits of the formula:

> "Despite the fact that heroin, which is universally recognized as an invaluable respiratory sedative, is a conspicuous element of Glyco-Heroin, Smith, the other constituents, henbane, ammonium hypophosphite, balsam tolu and white pine bark are factors of no less importance; indeed, it is through the concerted action of its several ingredients that the preparation proves so notably beneficial in the class of affections in which it is indicated. The constantly increasing popularity of the preparation in the treatment of respiratory affections is the best adducible evidence of its value in such disorders."

The absurdity of this assertion will be appreciated on comparing the nature, quantities and activities of the several ingredients. Thus, while heroin, a potent habit-forming drug, is present in unusually large proportions, tolu, an innocuous or comparatively harmless product, is said to be represented by ¼ grain, a relatively small quantity, hardly sufficient to impart even a distinctive taste or flavor. Ammonium hypophosphite, in the amount said to be present, may be considered to be practically useless, while the dose of hyoscyamus, an additional narcotic, is fairly large. The white pine bark present is probably as active as would be a corresponding amount of white pine shavings or of turpentine sufficient to give the preparation a slight odor. The vehicle, glycerin, is claimed to be "notably advantageous," but not a word occurs in the discussion by the manufacturer in regard to the presence of alcohol, which is certainly quite as active medicinally as the balsam of tolu and contributes fully as much to the flavor or taste of the preparation as does the white pine bark.

In prominent type on the outer label of the trade package we are told that the preparation is intended for the treatment of "COUGH, ASTHMA, PHTHISIS, PNEUMONIA, BRONCHITIS, LARYNGITIS, WHOOPING-COUGH AND KINDRED AFFECTIONS." In much smaller type: "Glyco-Heroin (Smith) is distinctly a product designed expressly for the use of physicians." The circular included with the trade package, however, bears statements which would tend to encourage self-drugging by the layman, and in view of the manner in which the preparation is exploited are undoubtedly intended to do so. For instance:

> "*Bronchitis.*—In the acute form of bronchitis, Glyco-Heroin (Smith) acts most happily. It tends to diminish the congestion and inflammation of the lining of the air passages, relieves the pain and institutes repair. . . .
>
> "*Phthisis.*—In the treatment of the cough of phthisis, Glyco-Heroin (Smith) is used with the most gratifying results. It checks the night sweats, acts favorably upon the reflexes, increases expectoration and induces refreshing sleep.
>
> "*Asthma.*—The preparation diminishes the intensity of the paroxysms and lengthens the intervals between their recurrence. By the administration of the preparation, asthmatic attacks can frequently be aborted.
>
> "*Pneumonia.*—In the initial stage of pneumonia, the preparation exercises a calming, antipyretic and sedative effect. In the latter stages of the disease, the analgesic and expectorant properties of the product are well displayed.
>
> "*Whooping-Cough.*—Administered in doses of from five to ten drops, this preparation affords surprisingly satisfactory results. The cough rapidly loses its spasmodic character and the frequency of the paroxysms is considerably diminished."

How cruelly misleading the literature put out by the manufacturer of this nostrum is, will be apparent from a comparison of the rather large dose of heroin in a teaspoonful of the nostrum and the directions on the package that:

> "The adult dose of Glyco-Heroin (Smith) is one teaspoonful repeated every two hours or at longer intervals, as the case may require.
>
> "Children of 10 or more years, from a quarter to a half-teaspoonful.
>
> "Children of 3 years or more, 5 to 10 drops."

A WICKED FALSEHOOD

Included in much of the advertising matter that has been put out is the bare-faced untruth that the preparation does not produce narcotism or habituation. Here is a quotation from an undated circular:

> "Glyco-Heroin (Smith) is decidedly preferable to preparations containing codein or morphine, by reason of the fact that it does not produce narcotism, constipation, gastric disturbance nor habituation, even though its administration be protracted."

That this assertion is not in keeping with facts is evidenced by the recent report of a study on the sale and use of heroin made by the U. S. Department of Agriculture. From the information gathered it appears that the sales of heroin and heroin-containing preparations have increased greatly, particularly in those states which have rigid laws preventing the indiscriminate sale of morphin and cocain. Investigation of the subject establishes the fact that many drug victims who formerly used morphin and cocain, and who under the new laws find it difficult to obtain these substances, have begun using heroin, the sale of which is not as yet carefully restricted under state laws. The drug is said to be fully as dangerous as morphin, and by many is held to be much worse, for the reason that it occasionally kills the victim outright, and its habitual use is far harder to overcome than that of other drugs.

Phillips[1] in discussing the prevalence of the heroin habit, reports, among others, the case of a physician aged 61 who began to take heroin because he suffered from a chronic cough and thought there was no danger of habit from the use of this drug because he believed the statements of various manufacturing firms who claimed that there was no danger of habit.

In a pamphlet now being distributed to the medical profession, entitled, "Glyco-Heroin (Smith), an exposition of its components together with references to its value in the treatment of Bronchitis, Cough, Cough of Phthisis, Laryngitis, Pneumonia and allied disorders of the Respiratory Tract," the several alleged uses of the nostrum in the treatment of cough, "Regardless of the nature of its underlying cause, . . . *whether of recent origin or of long duration*," are discussed at length, and eminent practitioners with degrees extending the width of the printed page are quoted in support of the statements made. While it may be permissible for a theoretically trained medical tyro who lays claim to the right of appending the abbreviations M.A., M.D., D.C.L., L.R.C.P. to his name to laud a heterogeneous habit-forming cough-syrup like Glyco-Heroin, Smith, similar testimonials from a man entitled to append Ph.G., M.S., M.D. to his name makes one doubt the value of the training, either scientific, pharmaceutical or medical, that has been given the poor unfortunate who, according to his own statements, indiscriminately doses a female patient of 7 and a male patient of 49 with huge doses of heroin every two, four or six hours.

The danger of contributing to the spread of the heroin habit by the use of preparations of this type is indicated by an editorial in The Journal of the American Medical Association,[2] which points out that although heroin and its hydrochlorid have been in use but a few years they have already established themselves among the habit-forming drugs and have become sufficiently conspicuous in this respect to awaken the thinking public to the deplorable results for which they may become responsible. Phillips,[1] in the article mentioned above, quotes Petty, who reports that in the last 150 cases of drug habit coming under his care he saw eight cases of heroin addiction. Three of these were initial cases; in one the patient had been cured of the opium habit, but following an operation heroin was prescribed, and the habit followed. The remaining four patients purposely substituted heroin for morphin, to which they had been addicted.

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[1] Phillips, John: Prevalence of the Heroin Habit, The Journal A. M. A., Dec. 14, 1912, p. 2146.

THE GROWTH OF HEROIN ADDICTION

The imminent danger of substituting heroin for either morphin or cocain is shown by the fact, reported by the U. S. Department of Agriculture, that during the early months of 1913 the coroner's office in Philadelphia County, Pa., held inquests on five sudden deaths from heroin poisoning. In each case the victim was a heroin fiend and took an overdose. Drug fiends are apparently able to consume relatively large quantities of morphin or cocain, but any sudden and material increase in the amount of heroin taken is liable to prove fatal. As indicating the wide sale of this substance, it is known that one druggist in Pennsylvania whose store is located in an undesirable section of his city has been buying heroin tablets in 25,000 lots.

GLYCO-HEROIN, SMITH, A "PATENT MEDICINE"

The popularity of Glyco-Heroin, Smith, as a household nostrum is suggested by the fact that one of the larger department-store type of drug-stores in the city of Philadelphia lists this preparation in its "patent-medicine" catalogue at $1.75 per bottle and sells it freely to all who care to buy. This is due to the fact that Pennsylvania, like many other states, does not include heroin in the prohibited list of habit-forming drugs that can be supplied only on physicians' prescriptions.

To what extent Glyco-Heroin, Smith, is responsible for developing the rapidly growing heroin habit is of course problematic. It is reasonable, however, to suppose that a preparation, each teaspoonful of which contains so large a dose of heroin as does this nostrum, when taken as repeatedly and as indiscriminately as is directed by the manufacturer, would offer possibilities for harm sufficient in number to induce the thinking medical practitioner to avoid its use altogether and at least to suggest to even the most commercial dabbler in the healing art the desirability of carefully considering its potency for harm before endorsing its use in the treatment of "cough and kindred affections."

AN EXPLANATION

It is never the intention of The Journal to do an injustice. Authenticated statements made to us relating to our article of April 11 regarding Wine of Cardui, manufactured by the Chattanooga Medicine Company, prompts the publication of the following:

The Chattanooga Medicine Company claims that only the alcohol needed as a solvent and preservative is used in the preparation of Wine of Cardui and that alcohol is only used for those purposes. They assert that they have employed leading chemists who have sought widely for another preservative, but without success, and that they once tried 5 per cent. and again 3 per cent. less alcohol but found that hundreds of cases of the preparation spoiled as a result of insufficient preservative. They state that the taste of the infusion is such as to prevent its use as a beverage and that it is not so sold or used, in fact that in too large doses the preparation has been found to act as an emetic. Based on the foregoing statement it is apparent that the terms "booze" and "tipple," as these words are commonly understood, cannot be applied to the preparation.

The concern says that when the present managers took control in 1906, they eliminated from the wrappers claims that, although for about thirty years presented in that same form, they felt might fairly be regarded as extreme; that their present desire and intention is to avoid on the wrappers or elsewhere claims that might reasonably or generally be objected to as extravagant.

In The Journal's article, John A. Patten, the principal owner of the Wine of Cardui business, was referred to, and his high standing in the organization of the Methodist Episcopal Church emphasized. To offset The Journal's criticisms, many letters are submitted to show that Mr. Patten is a man of high personal standing, and "that his relation to his church is based on his ability and service rather than on any financial gifts he may or may not have made."

Association News

PROGRAM OF PHILADELPHIA CLINICS

The following clinics have been arranged by the Committee on Clinic Days and will be held in Philadelphia on Monday, June 22, and on Friday and Saturday, June 26 and 27—the day preceding and the days following the Scientific Assembly of the Association. Fellows who attend the coming annual session can readily arrange to spend two days in Philadelphia by planning to reach that city on the morning of June 22. An hour's run in the evening will enable them to reach Atlantic City. In the same manner, they can arrange to spend the end of the week at these clinics.

Frederick Douglas Hospital, 1530 Lombard Street:

Monday, June 22.
11 a. m. Gynecologic Clinic. J. Q. McDougald.
5 p. m. Lecture Mental and Nervous Diseases. Alfred Gordon and R. W. Bailey.
Saturday, June 27.
11 a. m. Tuberculosis. C. A. Lewis.
Tinea Tonsurans. John P. Turner.

Gynecean Hospital, 247 North Eighteenth Street:

Monday, June 22.
9 a. m Gastroptosis. Henry D. Beyea.
10 a. m. Hysterectomy. Theodore A. Erck.
12 m. Hysterectomy. Brook M. Anspach.
Saturday, June 27.
9 a. m. Cystocele and Rectocele. George W. Outerbridge.
10 a. m. Prolapse of the Uterus. Henry B. Ingle.
11 a. m. Retroversion. J. Watson Martindale.

Episcopal Hospital, Front Street and Lehigh Avenue:

Monday, June 22
11 a. m. Abdominal Operation. L. H. Mutschler.
12 m. General Surgery. Thomas R. Neilson.
1 p. m. Orthopedic Clinic. Astley P. C. Ashhurst.
Saturday, June 27.
9 a. m. Surgical Clinic. Astley P. C. Ashhurst.
11 a. m General Surgery. Emory G. Alexander.
2 to 4 p. m. Inspection of Hospital. Astley P. C. Ashhurst.

Philadelphia General Hospital, Thirty-Fourth and Pine Streets:

Monday, June 22.
10 a. m. Tuberculosis. A. P. Francine.
11 a. m. The Anemias. J. H. Musser, Jr.
12 m. Neurologic Clinic. Charles S. Potts.
1 p. m. Cerebral Palsies. D. J. McCarthy.
2 p. m. Tuberculosis in the Home. Ward Brenton.
3 p. m. Operations on the Eye. J. W. Croskey.
3 p. m. Vulvovaginitis in Children. H. C. Carpenter.
Saturday, June 27.
11 a. m. Gynecologic Clinic. Ella B. Everitt.

Jefferson Medical College Hospital, Tenth and Sansom Streets:

Monday, June 22.
11 a. m. Obstetric Clinic. E. P. Davis.
11 a. m. Neurologic Clinic. F. X. Dercum.
12 m. Dermatologic Clinic. H. W. Stelwagon.
12 m. Cardiovascular Disease. H. A. Hare.
12 m. Nose and Throat Cases. D. Braden Kyle.
1 p. m. Medical Clinic. S. Solis-Cohen.
2 p. m. Ophthalmologic Clinic. W. M. Sweet.
3 p. m. Surgical Clinic. F. T. Stewart.

Friday, June 26, a Special Clinic for the Class of 1874 of the Jefferson Medical College, in the Clinical Amphitheater from 10 a. m. to 2 p. m. E. E. Montgomery. All physicians are welcome.

Saturday, June 27.
9 a. m. Medical Clinic. Thomas McCrae.
9 a. m. Gynecologic Clinic. E. E. Montgomery and J. M. Fisher.
10 a. m. Orthopedic Surgery. H. A. Wilson.
11 a. m. Surgical Clinic. John H. Gibbon.
11:30 a. m. to 1 p. m. Renal Surgery. H. R. Loux.
1 p. m. Pediatric Clinic. E. E. Graham.
3 p. m Surgical Clinic. F. T. Stewart.

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[2] Facts About Heroin, Current Comment, The Journal A. M. A., Dec. 21, 1912, p. 2262.

HOWARD HOSPITAL, 801 South Broad Street:

Monday, June 22.
12:30 p. m. Surgical Clinic. Barton Cooke Hirst.

ST. JOSEPH'S HOSPITAL, Sixteenth Street and Girard Avenue:

Monday, June 22. In the East operating-room:
8:30-10 a. m. Uterine Prolapse. P. B. Bland.
10 a. m. Retrodisplacements of the Uterus. F. Hurst Maier.
11 a. m. Abdominal Surgery. Melvin M. Franklin.
12 m. General Surgery. Charles F. Nassau.
2 p. m. End-Results of Gastro-Enterostomies. J. A. Kelly.
3 p. m. General Surgery. J. F. X. Jones.
4 p. m. General Surgery. W. T. Ellis.
In the West operating-room:
8:30-10 a. m. Ear, Nose and Throat. G. M. Marshall.
11 a. m. Intestinal Disorders of Infancy. W. C. Hollopeter.
12 m. Neurologic Clinic. M. H. Bochrock.
4 p. m. Medical Clinic. J. C. Flynn.
In the Outpatient Department:
3 p. m. Eye Clinic. Paul J. Pontius.
4 p. m. Eye Clinic. Charles J. Jones.
Saturday, June 27.
In the East operating-room:
8:30-10 a. m. Orthopedic Surgery. J. M. Spellissy.
10-11 a. m. Pelvic Peritonitis. P. B. Bland.
11-12 m. Uterine Prolapse. F. Hurst Maier.
12 m. Gynecologic Surgery. E. E. Montgomery.
2 p. m. General Surgery. Charles F. Nassau.
3 p. m. General Surgery. J. F. X. Jones.
4 p. m. General Surgery. J. A. Kelly.
In the West operating-room:
8:30-10 a. m. Ear, Nose and Throat. G. M. Marshall.
11 a. m. Carotid Body. P. N. Bergeron.
12 m. [illegible]. H. Bochrock.
In the [illegible]
3 p. m [illegible] Pontius.
4 p. m. Ear, Nose and Throat Clinic. W. E. Quicksall.

KENSINGTON HOSPITAL, 136 Diamond Street:

Monday, June 22.
11 a. m. Clinic. H. C. Deaver.

WILLS HOSPITAL, 1810 Race Street:

Monday, June 22, there will be an operative clinic on reserved cases by W. M. Sweet, Paul Pontius, S. Lewis Ziegler, McCluney Radcliffe and Samuel D. Risley. Also a special arranged clinic on the Saturday following the meeting at Atlantic City by the same men.

PRESBYTERIAN HOSPITAL, 51 North Thirty-Ninth Street:

Monday, June 22.
10 a. m. Clinic. Edward N. Hodge.
12 m. Clinic. Richard Woods.
12 m. Clinic. George E. Shoemaker.
Saturday, June 27.
10:30 a. m. Clinic. Henry R. Wharton.
11 a. m. Clinic. John H. Girvin.

NORTHWESTERN GENERAL HOSPITAL, 2017-2019 North Twenty-Second Street:

Monday, June 22.
10:30 a. m. Clinic on Nervous and Mental Diseases. Alfred Gordon.
11:30 a. m. Surgical Clinic. J. Thompson Schell.
1:30 p. m. Genito-Urinary Clinic. Robert Boyer.
Saturday, June 27.
10:30 a. m. Medical Clinic. H. A. Smith.
11:30 a. m. Surgical Clinic. J. Thompson Schell.
1:30 p. m. Ear, Nose and Throat. Ellwood Matlack.

PHILADELPHIA LYING-IN CHARITY HOSPITAL, 126 North Eleventh Street:

Monday, June 22.
12 m. Hemorrhages of Pregnancy. Strickler Coles.
Saturday, June 27.
12 m. Lying-In Charity Methods. George M. Boyd.

GERMAN HOSPITAL, Girard and Corinthian Avenues:

Monday, June 22.
Afternoon. Surgical Clinic. John B. Deaver.
Saturday, June 27.
Afternoon, Surgical Clinic. John B. Deaver.

MEDICO-CHIRURGICAL COLLEGE, Eighteenth and Cherry Streets:

Monday, June 22.
10 a. m. Surgical Clinic. William L. Rodman.
12 m. Cardiac Cases. James M. Anders.
1 p. m. Obstetric Cases. George M. Boyd.
2 p. m. Orthopedic Clinic. James P. Mann.
3 p. m. Bronchoscopy. Ross H. Skillern.
Saturday, June 27.
11 a. m. Syphilis of Nervous System. Theodore H. Weisenburg.
12 m. Surgical Clinic. Ernest Laplace.
1 p. m. Eye Clinic. L. Webster Fox.
2 p. m. Deep Roentgenotherapy. George E. Pfahler.

UNIVERSITY OF PENNSYLVANIA HOSPITAL, 3400 Spruce Street:

Monday, June 22.
Surgical Clinic. Edward Martin, J. B. Carnett, E. L. Eliason and G. M. Laws. Exact hour announced later.
9 a. m.-12 m. Gynecologic Clinic. John G. Clark, B. M. Anspach, C. C. Norris and F. E. Keene.
9 a. m.-12 m. Clinical Medical Demonstrations. Alfred Stengel, O. H. P. Pepper, J. H. Austin, J. Herbert Fox, A. H. Hopkins and P. G. Miller.
10 a. m.-1 p. m. Surgical Clinic. Charles H. Frazier, George P. Muller and L. H. Landon.
11 a. m.-1 p. m. Orthopedic Clinic. G. G. Davis, William J. Merrill, Frank Dickson, Walter Elner and DeF. Willard.
12-3 p. m. Genito-Urinary Diagnostic Methods. E. H. Siter, U. A. Uhle, W. H. MacKinney, J. H. Laird, J. L. Herman and A. Randall.
2:30-3:30 p. m. Nose and Throat Work. Charles P. Grayson, W. S. Hargett and D. W. Husick.
3 p. m. Surgical Clinic. A. C. Wood and T. T. Thomas.
3 p. m. Eye Clinic. G. D. de Schweinitz, J. F. Carpenter, E. A. Shumway, T. B. Holloway, Carl Williams and H. M. Langdon.
Saturday, June 27.
Surgical Clinic. Edward Martin, J. B. Carnett, E. L. Eliason and G. M. Laws. Exact hour announced later.
Surgical Clinic. John B. Deaver, D. B. Pfeifer, G. G. Ross, and A. D. Whiting. Exact hour announced later.
9 a. m.-12 m. Gynecologic Clinic. John G. Clark, B. M. Anspach, C. C. Norris and F. E. Keene.
9 a. m.-12 m. Clinical Medical Demonstrations. Alfred Stengel, O. H. P. Pepper, J. H. Austin, J. Herbert Fox, A. H. Hopkins and P. G. Miller.
12 m. Pediatric Clinic. P. Crozier Griffith, M. Ostheimer, C. A. Fife, H. C. Carpenter and J. C. Gittings.
12·30 p. m. Cesarean Section. Barton C. Hirst.
1-2 p. m. Neurologic Clinic. William G. Spiller.
2-3 p. m. Social Service Work. Fred H. Klaer.
3-4 p. m. Ear Clinic. B. Alexander Randall and Ralph Butler.
3-4 p. m. Dermatologic Clinic. M. B. Hartzell.

MOUNT SINAI HOSPITAL, Fifth and Reed Streets:

Monday, June 22.
11 a. m. Surgical Clinic. Edward Martin, Max Staller and Nathaniel Ginsberg.
11 a. m. Nose and Throat Clinic. Lewis Fisher.
1 p. m. Hysterectomy. Leon Brinkmann.
Saturday, June 27.
11 a. m. Nose and Throat Clinic. Lewis Fisher.
2 p. m. Roentgen Therapy. George Rosenbaum.

METHODIST EPISCOPAL HOSPITAL, South Broad and Wolf Streets:

Monday, June 22.
10:30 a. m. Spinal Cases. J. Torrance Rugh.
12 m. Surgical Clinic. Levi J. Hammond.
1:30 p. m. Abdominal Cases. Richard C. Norris.
3 p. m. Throat and Ear Clinic. Walter Roberts.
Saturday, June 27.
10 a. m. Abdominal Cases. William R. Nicholson.
1 p. m. Herniotomy. Levi J. Hammond.
3 p. m. Ophthalmic Cases. Philip H. Moore.

WOMAN'S HOSPITAL, 2137 North College Avenue:

Monday, June 22.
9 a. m. Abdominal Operation. Marie K. Formad.
11 a. m. Pediatric Clinic. Eleanor Jones.
2 p. m. Violet Rays in Surgical Work. Kate W. Baldwin.
3 p. m. Adenoids and Tonsils. Laura Hunt.
Saturday, June 27.
9 a. m. Gynecologic Operations. Caroline M. Purnell.
10 a. m. Cystoscopy. Catherine MacFarlane.
2 p. m. Ophthalmologic Clinic. Mary Buchanan.
3 p. m. Throat Clinic. Margaret Butler.

MEDICAL MISSIONS AT THE ATLANTIC CITY SESSION

The Catholic members of the American Medical Association who are interested in medical missions are invited to apply for further information to, P. J. Flagg, M.D., the Marlborough Blenheim, Atlantic City, or Maryknoll, Ossining, N. Y.

Correspondence

A Caffein Addict with Asthenopic Symptoms

To the Editor:—Miss Y. A., aged 18, office clerk, of slight stature, frail physique and attentive and refined disposition, for four years had had the ordinary symptoms of asthenopia, which had been worse for several months. Refraction under complete cycloplegia showed hyperopic astigmia, axes oblique. A full correction was provided, which, to my surprise, gave but little relief. The correction was verified by repeated examinations and the most careful attention paid to the adjustment of the frames, but the symptoms continued. The patient became eccentric and stubborn, at times exhilarated, then depressed, and would exhibit lapses of memory and deportment with an indifference to the usual conventionalities and proprieties. The headaches were intermittent and not caused by near work, but were always increased by it in an attempt at reading, etc., during an attack. Insomnia was present at night, yet she would fall asleep at her work during the day.

Affairs were becoming serious and I was at my wits' end when one day the patient asked if there could be any danger in an overindulgence in Coca-Cola, stating that she drank from three to six glasses a day. In addition, she had two or three cups of strong coffee at mealtime, sometimes taking but little other nourishment. Curtailing the amount of daily ingestion of caffein caused a prompt improvement in all symptoms, but unfortunately there is a possibility that the patient has acquired some rather detrimental incidental habits which will require a longer time for elimination.

I feel that such a case is of interest from an ophthalmologic point of view and also that it indicates that the profession should be more alive to the pernicious influence in habit formation of some of the popular beverages served to young persons at public "slop" fountains.

Otis Orendorff, M.D., Canon City, Colo.

A Simple Method of Vaccination

To the Editor:—After reading Dr. Force's article on "An Investigation of the Causes of Failure in Cow-Pox Vaccination" (The Journal, May 9, 1914, p. 1466), in which he mentions the successful use of the von Pirquet borer in vaccinating against small-pox, I would call attention to my article on "A Simple Method of Applying the von Pirquet Test" (The Journal, July 5, 1913, p. 27), which has been used successfully in hundreds of cases. I use the flat end (2 mm. wide) of sterile wooden toothpicks instead of the metal von Pirquet borer. It seems to me that this would be ideal, because the simplest technic of any, for cow-pox vaccination. After the arm is cleansed, the flat end of the sterile wooden toothpick would be dipped in the vaccine and gently pressed on the desired spot on the skin. While the toothpick is held in the middle by the thumb and index-finger, a few turns made by rolling the toothpick to and fro on its own axis between the fingers would result in a neat round abrasion of the epithelium without the appearance of blood. The use of a separate toothpick for each vaccination would insure all the advantages that go with absolute cleanliness and utmost simplicity. Louis Shalet, M.D., New York.

Phonograph in Operating-Room

To the Editor:—For some time I have been employing a phonograph in my operating-room as a means of calming and distracting my patients from the horror of the situation when going under the anesthetic and during operations performed partially or entirely with local anesthesia. The phonograph talks, sings or plays on, no matter how anxious, busy or abstracted the surgeon, anesthetist and assistants may be, and fills the ears of the perturbed patient with agreeable sounds and his mind with other thoughts than that of his present danger. Too often when told to keep up an agreeable conversation with our patients operated on under "local," the assistants merely ask again and again if the sufferer is being hurt or if he feels ary pain, thus only adding to the self-consciousness of the patient, and, after weather commonplaces are exhausted, it seems impossible to find a topic for conversation of any sort, and dead silence ensues. It is not uncommon for nervous patients to beg to have the phonograph continue, should it run down, and many of them converse animatedly with the anesthetist on the subject of the pieces being played throughout the entire operation.

I owe to Dr. Burdick, our anesthetist, thanks for his selection of records admirably adapted to the tastes and temperament of the subjects.

Evan O'Neill Kane, M.D., Kane, Pa.
Surgeon, Kane Summit Hospital.

Cholesterinized Antigens

To the Editor:—In The Journal, May 9, 1914, p. 1458, there is an article by Dr. Loyd Thompson on the use of cholesterinized antigens in the Wassermann reaction, in which he strongly disagrees with the findings reported by us in a previous article (The Journal, Jan. 31, 1914, p. 363), asserting that his series of 356 tests is a larger series than ours from which to draw conclusions. As a matter of fact, the number of cases in which Thompson employed the cholesterinized antigen controlled by the syphilitic liver antigen was only 50, as compared with 133 cases in our series. The results given by Thompson, based on examination of 306 cases in which the cholesterinized extract alone was used, obviously furnish no basis of comparison between the merits of the two antigens, and we feel that we should have obtained practically the same results with syphilitic liver antigen. Arguing from Thompson's point of view, we might cite the results of 2,500 cases in favor of syphilitic liver antigen, uncontrolled by cholesterinized extract.

In regard to the suggestion that the discrepancy in the results of Thompson's work and ours may be accounted for in the titration of reagents, we may state that the technic for titration of complement, etc., recommended by Thompson is almost identical with one that has been used by us for over a year, which was presented before the Pathological Society of Philadelphia in January, 1914, and which is in press for publication in an early issue of the *American Journal of the Medical Sciences.*

B. A. Thomas, M.D., and R. H. Ivy, M.D., Philadelphia.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

OBSTETRIC ANESTHESIA BY SCOPOLAMIN AND MORPHIN

To the Editor:—Can you refer me to any recent article on scopolamin-morphin anesthesia as practiced by Bernhardt Krönig and Karl Gauss at the Freiburg clinic, Baden?

J. P. McMahon, M.D., Milwaukee, Wis.

To the Editor:—Is the twilight sleep method of anesthesia in obstetrics by scopolamin and morphin known in the United States as to formula, and does any pharmaceutical house put out the preparation used in the Freiburg clinic in Germany referred to in the June number of *McClure's Magazine?*

What is considered the most up-to-date obstetric anesthesia aside from the use of chloroform and ether?

E. E. Sweeney, M.D., Grafton, Neb.

To the Editor:—What is the present status of morphin-scopolamin anesthesia among obstetric authorities?

W. O. Wilkes, M.D., Waco, Tex.

Answer.—Aside from the foregoing, we have received many letters regarding the article referred to. It is extremely unfortunate that a popular magazine such as *McClure's*, the efforts of which in the past in behalf of true medical science have been so influential for good, should have published such a sensational and misleading article without due consideration of its effect on the public. It would seem that the editor of a magazine publishing an article on a scientific subject, especially one discussing such an important subject as this, would consult some competent medical authority as to the underlying facts. The public on reading this article would naturally infer that this method of analgesia was something new. As a matter of fact, our readers of course know that the suggestion for the use of a combination of scopolamin (hyoscin) and morphin was made over 12 years ago, and was put to a pretty thorough test, especially in Germany. While it is not altogether obsolete, it has been practically discarded.

Another natural inference would be that an obstetrician would be negligent of his patients' rights if he withheld the scopolamin-morphin method in his labor cases. The facts are that this method has been thoroughly investigated, tried and found wanting, because of the danger connected with it. Even the most enthusiastic among its German advocates have emphasized its danger, and have stated that it should not be used except in hospitals, where constant, careful watching is possible.

The *McClure's* article seems to have been written, however, especially to emphasize the remarkable results obtained in Freiburg by Krönig and Gauss. As a matter of fact, the Freiburg method differs but slightly from that originally suggested. By the Freiburg method one dose of morphin is given, whereas the scopolamin is repeated as indicated—the indication being, not pain, but memory.

The history of the method is of interest in showing its development. Steinbüchel of Graz began with small doses of morphin and scopolamin and had no unfavorable results, that is, no dangerous results. Those who followed him used repeated doses of morphin as well as scopolamin—sometimes excessively large doses, with the result that there were serious consequences, particularly the death of the infant. In 1907 a special technic was elaborated by Gauss in the clinic of Krönig at Freiburg in Baden. The technic of Gauss is substantially as follows: The object aimed at is to make the parturient woman forget her pains, although she may be conscious of them at the time; the condition known as "twilight slumber" (*Dämmerschlaf*) is produced. In order to test the mental condition of the patient, she is shown some object and after an interval of about half an hour, this object is again called to her attention. If she remembers having seen it before, she is not sufficiently amnesic, and an additional dose of scopolamin is given. It should be remembered that the method of Gauss is not correctly represented by the frequent recommendations to use scopolamin-morphin for the relief of pain in labor. Let it be emphasized that but a single dose of morphin is used. In this way the frightful mortality that occurs in infants from morphin injections is largely eliminated.

Scopolamin also has its own dangers. Small doses sometimes produce very serious results. There may be great disturbances of the nervous system, or of the heart and lungs. It is impossible to predict when these results may follow its administration and they cannot be guarded against. Proprietary preparations containing fixed quantities of the two alkaloids cannot be successfully used to secure the results desired.

The impression gained from a review of the literature is that the present method of obstetric anesthesia by scopolamin and morphin is not safe for the child and not always safe or successful for the mother. The time may come when the hope expressed in 1911 by Lequeux may be fulfilled, that further clinical investigations cautiously conducted will secure a harmless agent with which to lessen or abolish altogether the pains of labor; but that time has not yet arrived.

The following are references to some of the more important studies of this subject:

Flatau, S.: Ueber die Anwendung der Morphium-Scopolamin Narkose in der Gynäkologie, *München. med. Wchnschr.*, 1903, No. 28, abstr., The Journal, Aug. 22, 1903, p. 528.

Steinbüchel, von: Scopolamin-Morphin in Obstetrics, *Centralbl. f. Gynäk.*, 1902, No. 48; abstr., The Journal, Jan. 10, 1903, p. 133.

Gauss, C. J.: Scopolamin-Morphin Anesthesia in Labor, *Arch. f. Gynäk.*, 1906, lxxviii, No. 3; abstr., The Journal, July 7, 1906, p. 77.

Wood, H. C., Jr.: Comparative Danger of Scopolamin-Morphin Anesthesia, *Am. Med.*, December, 1906; abstr., The Journal, Feb. 2, 1907, p. 454.

Hocheisen: Geburten mit Scopolamin-Morphium (Childbirths), *München. med. Wchnschr.*, 1906, liii, No. 37; abstr., The Journal, Dec. 1, 1906, p. 1862.

Gauss, C. J.: Technic of Scopolamin-Morphin Anesthesia in Obstetrics, *Centralbl. f. Gynäk.*, 1907, xxxi, No. 2; abstr., The Journal, March 9, 1907, p. 912.

Gauss, C. J.: First Thousand Childbirths Under Scopolamin-Morphin, *München. med. Wchnschr.*, 1907, liv, No. 5; abstr., The Journal, March 16, 1907, p. 983.

Steffens, W.: Deliveries Under Scopolamin-Morphin, *Arch f. Gynäk.*, 1907, lxxxi, No. 2; abstr., The Journal, May 25, 1907, p. 1821.

Krönig, B.: Painless Delivery Under Scopolamin-Morphin, *Deutsch. med. Wchnschr.*, 1908, xxxiv, No. 23, abstr., The Journal, July 11, 1908, p. 175.

Kleinertz, F.: Delivery Under Scopolamin-Morphin, *Ztschr. f. Gynäk.*, 1908, xxxii, No. 42; abstr., The Journal, Nov. 21, 1908, p. 1827.

Hatcher, R. A.: Scopolamin-Morphin in Narcosis and in Childbirth, The Journal, Feb. 12, 1910, p. 516. Feb. 5, 1910, p. 446 and

Lequeux, P.: Résumé of Recent Literature on Scopolamin-Morphin Anesthesia in Obstetrics, l'Obstétrique, February, 1911.

STEROLS AND THE BIOCHEMISTRY OF BACTERIA

To the Editor:—In your Current Comment last week on "The Biochemistry of Bacteria" (The Journal, May 30, 1914, p. 1730, you speak of "sterols." Can you give a clearer definition of this term? You speak of cholesterol as being a familiar example of sterols. What relation does cholesterol bear to sterols? Are they chemical derivatives or are they related by their physical properties? I am trying to keep up with the progress medicine is making, but find it difficult to do so when words like this are used that do not appear in the dictionaries.

J. H. S.

Answer.—When animal tissues are extracted with ether they yield to this solvent a mixture of true fats along with that heterogeneous group of substances at present familiarly known as "lipoids." If the ether extract is saponified with an alkali there remains, admixed with the soaps and other products formed in the reaction, an unchanged substance at one time called a "non-saponifiable" fat, and better known as cholesterin. This is a monohydric alcohol of the formula $C_{27}H_{45}OH$; its exact constitution is still unknown, although a great deal of research has been devoted to it. In conformity with modern nomenclature in organic chemistry, whereby the alcohols receive the ending "ol," the compound just referred to is now as a rule spoken of as cholester*ol*, precisely as one alludes to the alcohol phen*ol* or cres*ol*.

While cholesterol has been isolated uniformly from the tissues of mammals and birds, whenever the lipoid bodies contained in them have been investigated, with one or two exceptions no other substance similar to it had, until quite recently, been discovered in animal protoplasm. From the vegetable kingdom, on the other hand, a large number of bodies, isomeric with and no doubt closely related to, cholesterol, have been obtained—the phytosterols. Although recent observations show that the number of these is perhaps not so great as was at one time supposed, owing to the fact that many of the products described under different names are mixtures of phytosterols, nevertheless not only do many substances of this general type exist, but frequently, different forms occur in the same plant, each associated with one or other of the plant structures.

More recently the study of the distribution of these nonsaponifiable ether-soluble products has been extended to include all orders of animals from the chordates to the coelenterates. The results indicate that the protoplasm of all animals examined, and, therefore, probably of all animals, contains at least one member of the cholesterol family. The individual products isolated, differing in certain undeniable physical and chemical properties such as crystalline form, melting points, etc., have been variously named, usually to indicate their origin in nature. Thus we have sitosterol, bombicesterol, clionasterol and coprosterol, among others. To give some inclusive or generic name to cover all of these varied evidently related substances derived from animals and plants, the word "sterin," or better, "sterol," has been adopted of late. The sterols have, in turn, been classified by Dorée (*Biochem. Jour.*, 1913, vii, 618) into zoosterols (from animals), phytosterols (from plants) and matasterols the latter common to animals and plants. For a recent review of the subject the reader is referred to Windaus: Die Sterine, in Abderhalden's Biochemisches Handlexikon, iii, 268, and to the paper of Dorée mentioned above.

STATES RECIPROCATING WITH NEW YORK

To the Editor:—Please inform me with what states New York has reciprocal relations.

C. J. B.

Answer.—New York has established reciprocal relations with Delaware, Indiana, Michigan, New Jersey, Ohio, Utah and Wisconsin.

BAELZ' DISEASE

To the Editor:—A patient came to me with what I diagnosed as eczema of the lip. There is no history of syphilis. He had been told by a physician that it was Baal's disease and that it was very rare. As I can find nothing in regard to this rare disease in my text-books, will you please inform me?

M. F.

Answer.—"Baal" is probably a misspelling of "Baelz." Baelz' disease is a form of cheilitis glandularis or myxadenitis labialis. It is described by Unna in an article "Ueber Erkrankungen der Schleimdrüsen des Mundes" (*Monatsh. prakt. Dermatol.*, 1890, xi, 317).

It is an inflammation of the mucous glands of the lip and the periglandular tissue, affecting chiefly the lower lip. In Unna's cases the mucous glandular swelling went on to pronounced suppuration, crusting and ulceration and then cicatrization. Unna found that local treatment with tincture of iodin acted as a specific, improvement ensuing immediately.

CRITICISM OF PRESCRIPTION

To the Editor:—Please explain to me what should be the result of the following combinations:

Phenacetin	gr. ix
Codein sulph.	gr. ⅓
Aspirin	gr. vi
Sugar of milk	gr. vi

Take with glass of water three times a day.

P. J. B. LeBlanc, M.D., Fairbanks, Alaska.

Answer.—There is no chemical or physiologic incompatibility in this prescription. The remedies are synergistic and the doses, though rather large, are not above what might be given in some cases.

Medical Economics

This Department Embodies the Subjects of Post-graduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

A LAYMAN'S VIEW OF OSTEOPATHY

A bill giving osteopaths all the rights of regularly qualified physicians recently passed the New York legislature and was sent to Governor Glynn for signature. He held a hearing on the bill, April 13, at which Mr. Abraham Flexner, one of the secretaries of the General Education Board, presented a statement of the present condition of osteopathic schools, as found by a personal inspection of them. Mr. Flexner's statement is of value as showing the fallacy of the educational and scientific claims of osteopathy. Mr. Flexner said:

"Your Excellency, as you doubtless know, I am not a physician. I have no practice to protect, and no particular school of medicine to defend or apologize for. I am in the exceptionally advantageous position of having freely criticized medical schools of all denominations. This criticism was based on a study of medical education in the course of which I visited every medical school in the United States and Canada, and saw every nook and corner of them. Subsequently I visited not all, but most of the medical schools in Europe.

"The general difference between the osteopathic schools, as I found them in 1909 and 1910, and the other medical schools is this: Among regular and homeopathic medical schools there were some good and some bad. The osteopathic schools were all bad.

"The gentlemen who will be privileged to practice medicine in the state of New York, if your Excellency signs this bill, were graduates of the eight osteopathic schools which I visited in 1909 and 1910, having all graduated previously to my visit and under conditions that were probably worse than those which I saw during that time.

"I wish now to describe to you, school by school, exactly what I observed at that time. We will assume that the schools as they passed through them were as good as they were when I visited them.

"In the first place, I have here the catalogues of all those schools of the years 1909 and 1910, just about the time when I visited them, and a little subsequently to the time during which these gentlemen passed through them.

"The most striking general characteristic of the schools at that time was their outspoken and purely mercenary character. Without a single exception they were conducted, and very efficiently and energetically conducted, as business enterprises for the making of money.

"You will see in a moment, when I come to speak of the entrance requirements, that the entrance requirements were so low that practically anybody might enter them on application. In order to get large numbers of students of this low academic grade, the schools indulged not only in all kinds of undignified advertising, but circulated the catalogues, which I have here, and which were intended to be simply an appeal to crude commercial interest. I am going to quote you something from each of these catalogues.

"The following is from the catalogue of one of the Los Angeles schools:

> "'People are ready to pay for relief from distress and sickness. Many of our graduates are earning as much in a single month as they were formerly able to earn by a full year's work. Ninety-seven per cent. of all our graduates of the past are to-day earning their living in the practice of osteopathy. We mention these facts because the uninitiated young man or woman is entitled to know.'

"Again, later:

> "'Prospective students may be sure of employment during their leisure hours.' (You can imagine how much of leisure a two-year course should allow!) 'Any young man or woman who is able to arrange for the tuition can master the course. Osteopathic treatments are given to *students without expense*. The saving in bills for treatment has in some cases more than covered the cost of tuition.'

"There is a second Los Angeles school called the Pacific College, from the catalogue of which the following is taken:

> "'It is safe to say that in no case has a competent osteopath made a failure in his attempt to build up a paying practice. His remuneration, counted in dollars, would be greatly in excess of what he could expect to receive in most other lines of professional work.'

"From the Des Moines school catalogue is taken the following:

> "'The profession will yield better returns than any other profession.'

"This, from the Philadelphia school catalogue:

> "'A lucrative practice is assured to every conscientious and capable practitioner.'

"From the Massachusetts school is the following:

> "'Osteopathic students can step at once into a paying practice. Seventy per cent. of the graduates of osteopathic colleges succeed financially, while only 7 per cent. of those from other medical colleges are thus successful. Osteopathy is one of the best-paid professions in the world to-day. Any one who is dissatisfied with his or her calling in life might well consider osteopathy. The rewards are many and adequate Financially, a three years' course in osteopathy is an exceedingly good investment. The Massachusetts College of Osteopathy graduate who does not make as much as the total cost of his osteopathic education in his first year of practice is in exception. What other investment can possibly be made that will yield 100 per cent. or more first year out, and at least as much as that each year thereafter?'

"From the Central College in Kansas City:

> "'The average osteopath has a better practice than ninety out of every hundred practitioners. The young osteopath builds up a practice *in less time than the regular practitioner*.'

"This, then, is the nature of the appeal, your Excellency, addressed to the kind of candidate that I am now going to describe to you.

"Medical schools offer, including osteopathic schools, instruction in anatomy, chemistry, physiology, pathology, surgery, obstetrics, and so on. In order to be sure that students will be able to grasp such difficult and exacting subjects, it is necessary, and has been found necessary in all states, to insist on a minimum academic preparation.

"The preparation in the state of New York now is, at the very least, a four-year high-school course, which shall include a year each in chemistry, physics and biology.

"Now I am going to read you the entrance requirements in the various osteopathic schools as I found them in 1909 and 1910, about the time when the gentlemen who will be beneficiaries of this law if signed were graduated. The following is from the catalogue of the Los Angeles school:

> "'In order to be admitted to this school, a student must show evidence of proper training' (I call your attention to the fact that it does not provide submission to an examination) 'in English, mathematics, history, geography'—that is to say, less than a common-school education.
>
> "'Moreover' (and this is a verbatim quotation), 'candidates found deficient in one or more of these four subjects may be admitted on condition.'

"That is, there was no academic requirement whatsoever for admission to the Los Angeles school at the time of my visit. Anybody who could pay the fees went in.

"The following is from the Des Moines school:

> "'Evidence of proper training in English grammar, arithmetic, U. S. history, geography and elementary physics.'

"Evidently, very elementary physics, since it was only such physics as might be taught to a student whose mathematical knowledge consisted in knowing simple arithmetic.

"The following is from the Philadelphia school:

> "'Candidates for admission must have good moral character, good health, and student qualities.'

"Any kind of a credential was at that time accepted there, and no examination was required. The specifications in the catalogue were as vague as those I have quoted.

"The following is from the Massachusetts school:

> "'Evidence of proficiency, but no examination, in spelling, punctuation, arithmetic, history, geography and the elements of physical science.'

"The following is from the Kirksville school, which is the parent school. By the way, Kirksville

> "' . . . is commended to the prospective student on the ground that Kirksville is the home of osteopathy, with a good business college, three newspapers, two first-class hotels, scores of boarding-houses, five livery and feed stables, a steam laundry, three planing-mills, a shoe factory 700 by 300 feet in dimensions, many residences heated by hot water, and last and by no means least local option adopted by a two-thirds majority. . . . In order to enter this school the student must know English grammar and composition, rhetoric, arithmetic (including compound numbers and percentage) history and geography.'

"But if he fail to satisfy these exacting requirements, the student may be admitted without them.

"The following is from the Central College at Kansas City:

> "'Students must furnish creditable evidence of a good moral character and of practical training in the common branches.'

"In other words, there was not a single osteopathic school in the country that had any definite entrance requirements whatsoever. How can this state, having set up a standard and forced compliance therewith, open the doors to low-grade osteopathic graduates from other states less intelligently governed?

"Again, in respect to their facilities for teaching: If you will consult the catalogues, you will see that all these schools make a pretense of teaching all the laboratory branches required in the most exacting schools. And of course it is obviously necessary, in order to make a diagnosis, that the physician, to be a good osteopath, should understand chemistry, physiology, pathology, and anatomy especially, as it is the backbone of their science. At the time I visited these schools, *not a single osteopathic school in the country* possessed a decent laboratory in any subject, not even in anatomy.

"I will read to you, taken from my note-book which I have here, and which I shall be glad to leave with you, my description of the laboratory equipment of these schools, notes made as I passed from room to room under the chaperonage and guidance of one of the instructors, or the dean.

"The first one is the Des Moines school, and is as follows:

> "'The laboratory outfit is almost altogether made up of signs. There was a room with "anatomy" painted on the door which proved to be an empty amphitheater. There was a room with the word "physiology" painted on the glass door, which turned out to be a practically empty class-room with a few chairs and a few things in a book-case and no laboratory equipment whatsoever. A room marked "chemistry" was a disorderly and disarranged room with less equipment than would be needed in an elementary high school to teach chemistry. There were two or three incubators in the same room. There was another room marked "histology," which was locked, and nobody on the premises had a key to it. It was claimed that there were forty microscopes on the inside. There was also an "anatomy" room, which was a dirty and disorderly dissecting-room, in which there was an uncovered vat containing a single soaking body, party dissected and decaying. One or two tables apparently were in use in that room. On the floor back of the office there was also a room marked "Physics," the sole outfit of which was a friction electric machine. This room was not a class-room. This, then, was the laboratory equipment used in teaching 115 students.'

"The Littlejohn College of Osteopathy, which I think now is called the Chicago College, was visited. There were a number of absolutely bare class-rooms. No laboratories were in use at the time of my visit, because the college was undergoing expansion, and all the laboratories had been dismantled except the chemical laboratory, which had a simple equipment. When I suggested that perhaps all laboratory instruction had been temporarily suspended owing to the necessities of reconstruction, I was assured that that was not the case.

"In the Philadelphia school I found that each class has a separate room, all subjects taken by the class being apparently taught in that room. Instead of having rooms for anatomy, physiology, and so on, there was a room for seniors, sophomores, juniors, etc. This arrangement stamped it at once as simply a didactic school. The freshman room was bare, except for a few crude drawings, a case of bones, a model and a skeleton. There was another room in this school called the junior room, which was practically the same, with the exception that there were no bones in it.

"Then there was another room not designated as belonging to any special class, in which there was a stereopticon. There was also a histological laboratory with a small centrifuge and an invisible microscope. A small chemical laboratory was found in a dark and dingy cellar. There was absolutely no provision whatsoever for pathology, physiology or bacteriology, no museum and no books. There was a dissecting room, however, in a dark old stable in a horrible condition.

"The Kansas City school was called the Central College. At this school I found a small and very meager laboratory in chemistry. There was no other laboratory equipment worthy the name, not even in anatomy. The teacher of anatomy told me that students ought to know anatomy before dissecting. One body had been obtained in September and had been used up. Another was expected in February. When I asked the teacher in anatomy how he taught anatomy without a body, he said it was a simple matter; that if they taught a student anatomy before he began to dissect, his progress was quicker, and that therefore they had no use for a body at that time.

"I now come to the Kirksville school, which is the most pretentious and largest of them all, having almost six hundred pupils. There I found one room which was used for short six-week courses in bacteriology and physiology, in *which thirty-two persons could be accommodated*. There was one preparation room which was used for all laboratory subjects. The school was owned by two doctors who were more interested in fine cattle than in good school equipment. It had proved a very profitable investment, and the profits are invested, so I was informed by the people there, in a splendid stock farm. In the school there were four lecture-halls absolutely bare except for chairs; one small but fairly well-equipped chemical laboratory; a simple dissecting-room; a laboratory for histology and pathology, but no museum, and no gross pathological material.

"The Cambridge, or Massachusetts, School of Osteopathy had one small laboratory for pathology, bacteriology and histology, and one for chemistry. It had no laboratory for physiology, no museum, no books, and anatomy had been *postponed one month on account of lack of available* material.

"I think it is perfectly safe to say that on the laboratory side, the very worst regular homeopathic medical schools in the United States were at least as good as the best osteopathic schools at that time, and that regular and homeopathic schools of that type would have absolutely no standing before the Board of Regents of New York.

"As to clinical conditions: The backbone of the medical school is its clinical opportunities. Let me describe to you what existed at that time in this direction:

"*Kansas City.*—The school had absolutely no hospital facilities of its own, and no clinical connection where students could be taught. By paying a five-dollar fee its students were able to attend city hospital clinics given by the regular medical college. There was a small dispensary operated at the college, at which patients paid for the treatment they received. Practically, therefore, there were no clinical facilities whatsoever.

"*Kirksville.*—The parent school, with practically six hundred students at the time I visited it, had a hospital with *fifty-four beds, most of them containing the surgical* cases operated on in the good old way, with the knife, despite the fact that osteopathy is 'drugless and knifeless healing.' There were very few obstetrical cases, but a large dispensary where most of the treatments were paid for by the patients.

"*Philadelphia College.*—Here the clinical facilities consisted of a small hospital several blocks away from the school building, containing three beds. The catalogue states that the students have the privilege of witnessing operations at the University and Jefferson hospitals, performed by regular surgeons, the former belonging to the University of Pennsylvania and the latter belonging to the Jefferson Medical College. I made inquiries at both these institutions, and was told that the statement printed in the catalogue is untrue, and that any student of the Philadelphia College of Osteopathy who penetrated into these clinics was an intruder and a trespasser without rights or privileges of any kind.

"*Massachusetts.*—This school had clinical facilities at the Chelsea Hospital, a pay institution of less than fifteen beds and over an hour's journey from the college building.

"*Des Moines.*—This institution at the time of my visit to it had no hospital of any kind whatsoever, but I was told there was a pay hospital to be opened there shortly.

"*The Los Angeles College.*—This school also had a small pay dispensary, and a pay hospital under construction, which I presume has since been opened.

"The second Los Angeles college, the so-called Pacific College, had a hospital which it claimed as its own, and which is made much of in the catalogue. But I found, on closer inquiry, that students had no access to it.

"So that, on the clinical side, as on the laboratory side, these gentlemen have had practically a didactic training on an educational basis amounting to less than a common-school education.

"Now, if this bill is signed, these gentlemen will have the privilege of practicing in the state of New York precisely *as though they had been graduated from institutions* which maintain under the strict scrutiny of the State Department of Education a high entrance basis, and which are required by the State Department of Education to maintain expensive laboratories and elaborate clinics.

"Aside from the specific question here involved and aside from the discussion we heard up-stairs on Christian Science, there is a much wider question involved, namely, What is the duty of a modern state in respect to medical education?

"We have, with great difficulty, in the face of great opposition, and with an enormous expenditure of money and effort, built up in the state of New York a structure which makes

New York perhaps at this moment the best protected state in the Union in respect to sanitation and public health.

"The state of Illinois, the virtues of which were commended to us by an eloquent orator a few moments ago, is one of the least enviable in the Union, in this regard. There is more quackery rampant in the city of Chicago than in any other city in the Union.

"This is not a question of personal liberty. A modern state does not regulate its technical affairs by means of universal suffrage. In regard to the conservation of life and health, it is the function of the modern state to inquire into and to ascertain what is the best thing that can possibly be done. Having ascertained that, the state, for the benefit of those directly and indirectly affected, insists that we must all drink pure water, must notify the authorities of infectious diseases, and have well-ventilated and wholesome factories; these things are best for those immediately concerned and best in the long run for the entire community.

"That is the real question at issue in all this legislation. It is not a question of individual liberty. It is a question of the state using its statutory powers for the benefit of those who are in no position to protect themselves. The state must forbid the practice right to healers and untrained osteopaths for fear that the ignorant and misguided may injure themselves and others."

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama: Montgomery, July 14. Chairman, Dr. W. H. Sanders, Montgomery.

Arizona: Phoenix, July 7-8. Sec., Dr. John Wix Thomas, Phoenix.

California: Los Angeles, June 16. Sec., Dr. C. B. Pinkham, 135 Stockton St., San Francisco.

Colorado: Denver, July 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Connecticut: New Haven, July 14-15. Sec., Dr. Chas. A. Tuttle, New Haven. Homeopathic: New Haven, July 14. Sec., Dr. Edwin C. M. Hall, New Haven. Eclectic: New Haven, July 14. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

Delaware: Dover and Wilmington, June 16-18. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

Florida: Palatka, June 17-18. Sec., Dr. E. W. Warren, Palatka.

Indiana: Indianapolis, July 14-16. Sec., Dr. W. T. Gott, State House, Indianapolis.

Iowa: Iowa City, June 11-13. Sec., Dr. Guilford H. Sumner, State House, Des Moines.

Kansas: Kansas City, June 9-12. Sec., Dr. H. A. Dykes, Lebanon.

Kentucky: Louisville, June 15-17. Sec., Dr. A. T. McCormack, Bowling Green.

Maine: Augusta, July 7-8. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

Mary[illegible] lar Board: Sec., Dr. J. McP. Scott, [illegible] nore, June 15. Sec., Dr. O. N. Duvall, [illegible]

Michigan: Ann Arbor, June 9. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

Mississippi: Jackson, June 16-17. Sec., Dr. E. H. Galloway, Jackson.

Missouri: St. Louis, June 15-17. Sec., Dr. J. A. B. Adcock, Jefferson City.

Montana. Helena, June 30-July 2. Sec., Dr. Wm. C. Riddell, Helena.

New Hampshire: Concord, July 1-2. Regent, Mr. H. C. Morrison, Concord.

New Jersey: Trenton, June 15-16. Sec., Dr. H. G. Norton, 429 E. State St., Trenton.

New Mexico: Santa Fe, July 13. Sec., Dr. W. E. Kaser, East Las Vegas.

New York: June 23-26. Chief of Examinations Division, Mr. Harlan H. Horner, Department of Education, Albany.

North Carolina: Raleigh, June 9. Sec., Dr. Benj. K. Hays, Oxford.

North Dakota: Grand Forks, July 7. Sec., Dr. G. M. Williamson, Grand Forks.

Oklahoma: Oklahoma City, July 14. Sec., Dr. John W. Duke, Guthrie.

Oregon: Portland, July 7-9. Sec., Dr. L. H. Hamilton, Medical Bldg., Portland.

Rhode Island: Providence, July 2-3. Sec., Dr. Gardner T. Swarts, State House, Providence.

South Carolina: Columbia, June 9. Sec., Dr. A. Earle Boozer, 1802 Hampton Ave., Columbia.

South Dakota: Deadwood, July 14. Sec., Dr. Park B. Jenkins, Waubay.

Texas: Austin, June 23-25. Sec., Dr. W. L. Crosthwait, Waco.

Utah: Salt Lake City, July 6-7. Sec., G. F. Harding, 405 Templeton Bldg., Salt Lake City.

Virginia: Richmond, June 23-26. Sec., Dr. Herbert Old, Norfolk.

Vermont: Burlington, July 14-17. Sec., Dr. W. Scott Nay, Underhill.

Washington: Seattle, July 7. Sec., Dr. C. N. Suttner, Baker Bldg., Walla Walla.

West Virginia: Elkins, July 1. Sec., Dr. S. L. Jepson, Wheeling.

Wisconsin: Milwaukee, June 29. Sec., Dr. John M. Beffel, 3200 Clybourn St., Milwaukee.

Wyoming: Laramie, July 9-11. Sec., Dr. H. E. McCollum, Laramie.

The Eighth Report of the Carnegie Foundation for the Advancement of Teaching

The eighth annual report of the president of the Carnegie Foundation for the Advancement of Teaching, recently made public, shows a total endowment of $15,325,000, and an expenditure for the year ending Sept. 30, 1913, of $658,431. Of this $519,440 were distributed in retiring allowances to professors, and $80,949 in pensions to their widows, a total of $600,390. Thirty-three allowances were granted during the year, making the total in force 403, the average annual payment to an individual being $1,703. The total distribution from the beginning has been $2,936,927. The educational work of the foundation was separately endowed in January, 1913, by a gift of $1,250,000 from Mr. Carnegie through the Carnegie Corporation of New York. This body, which is endowed with one hundred and twenty-five million dollars for "the advancement and diffusion of knowledge and understanding," has five ex-officio trustees, of whom one must always be the president of the Carnegie Foundation for the Advancement of Teaching.

The study of legal education has been begun by a first-hand inquiry into the bar examinations of every state, a special study of legal teaching by Josef Redlich, who came from Vienna for the purpose, and by a personal examination of each of the 160 law schools in the country. Plans for the study of engineering education are now being completed. The earlier educational work of the foundation is continued in the report by commendation of the present tendency of college entrance requirements toward both elevation and flexibility. The need for further improvement is shown by the fact that only 55 per cent. of the students now in our colleges are high-school graduates. The decrease in the number of medical schools in the country and the rapid improvement of the better schools are commented on with appreciation. A general study of the problems of the state regulation of higher education is illustrated by a detailed account of the recent crisis in educational affairs in Iowa.

Tennessee Reciprocity Report

Dr. A. B. DeLoach, secretary of the Tennessee State Board of Medical Examiners, reports that 17 candidates were licensed through reciprocity from Jan. 15 to Dec. 23, 1913. The following colleges were represented:

College	Year Grad.	Reciprocity with
Columbian College, Washington, D. C.	(1903)	Kentucky
Atlanta School of Medicine	(1911)	Georgia
Georgia College of Eclectic Med. & Surg.	(1912)	Georgia
Northwestern University	(1908) (1911)	Minnesota Georgia
Kentucky School of Medicine	(1896)	W. Virginia
Louisville and Hospital Medical College	(1908)	Oklahoma
University of Louisville	(1911) (1911)	Kentucky Kentucky
University of Maryland	(1909)	Maryland
University of Michigan, Dept. of M. & S.,	(1894) (1897)	Michigan Michigan
University of Pennsylvania,	(1907) (1908) (1911)	North Carolina Virginia Maine
Chattanooga Medical College	(1907)	Virginia
University of Nashville	(1900)	Mississippi

District of Columbia January Report

Dr. George C. Ober, secretary of the Board of Medical Supervisors of the District of Columbia, report the oral and written examination held Jan. 13-15, 1914. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 10, of whom 7 passed and 3 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Georgetown University	(1913)	85.3, 91.4
Howard University	(1913)	75.8
American Medical Missionary College	(1904)	78.4
University of Illinois	(1913)	83.4
Baltimore Medical College	(1913)	80.9
Jefferson Medical College	(1905)	76.8
FAILED		
Maryland Medical College	(1913)	70.8
College of Physicians and Surgeons, Boston	(1911)	68.7
Leonard Medical School	(1913)	62.2

Book Notices

Defective Ocular Movements and Their Diagnosis. By E. and M. Landolt. Translated by Alfred Roemmele, M.B., Ch.B., and Elmore W. Brewerton, F.R.C.S. Cloth. Price, $2. Pp. 99, with 27 illustrations. New York: Oxford University Press, 1913.

In this small volume the authors have succeeded in presenting the essential known facts of this important, and at the same time difficult, branch of ophthalmology. A great deal has been written on this subject, and in this book the authors have not presented any new facts or proposed any new theories, but have endeavored to group the facts which are absolutely necessary for the correct understanding of oculomotor affections, particularly those which are apt to be overlooked by the general practitioner, as a correct analysis of the various forms of oculomotor disturbances is of the highest importance in diagnosing the different diseases of the brain and nervous system. Not the eyes alone but the entire nervous system must always be taken into account in oculomotor affections. After a brief summary on the fundamental laws governing the normal eye movements, with the anatomy and physiology of the ocular muscles, a few pages are given to the practical application of prisms, and the remainder of the book is devoted to the pathology of the different forms of oculomotor disturbances with their symptoms and diagnosis. Contrary to the method usually adopted in text-books, of enumerating the various diseases and then describing their symptoms, the authors have done just the reverse, beginning with the symptoms and then leading up to the disease which causes them. It is really thus, as the authors state, that the problem presents itself to us in practice. The patient does not come with the name of his disease, asking for the symptoms; he relates his symptoms and we should from them diagnose the disease and deduce the nature and seat of the lesion. The section on the differential diagnosis of paralysis of individual ocular muscles is admirably stated. The classification of the different rotations of the eye as brought out by the double images is easily comprehended, especially if one has familiarized himself with Duane's table. The latter part of the book, which deals with the seat and etiology of the oculomotor affections, gives the essential facts of each case, so far as they are known, clearly and briefly. The authors are to be congratulated on having given to the busy ophthalmic surgeon this *multum in parvo*, which will serve him, as they say, not as a hand-book, but rather as a handy book.

Principles of Surgery. By W. A. Bryan, A.M., M.D., Professor of Surgery, Vanderbilt University. Cloth. Price, $4 net. Pp. 677, with 224 illustrations. Philadelphia: W. B. Saunders Company, 1913.

This book, dedicated "to the men I have taught," presents to the student, or practitioner in need of "brushing up," the fundamentals of surgery and especially surgical pathology in a simple, logical manner. The individuality of the teacher is reflected in his writings, at the same time he is fair in his dogmatism. While objecting to the so-called non-absorbable sutures, he admits their harmlessness in intra-abdominal work and also concedes the fact that catgut becomes an excellent culture-medium for bacteria. The chapter on inflammation is particularly complete. Its explanations really explain, and should be of great help to the busy practitioner. The dictum, "no anodynes until the diagnosis is clear and the patient has agreed to the employment of safe means for his relief," cannot fail to impress the student. In the chapter, in which the treatment of sepsis is discussed, the author warns that "purgation of an exhausted patient can prove quickly fatal. The only safe route of elimination should be by the kidneys, and the remedy is water." In the chapter on tetanus he omits to mention the use of magnesium sulphate injections, apparently favoring Bacelli's intravenous injections of phenol (carbolic acid). Absolute non-interference of anthrax lesions and reliance on serum treatment are plainly urged. In the chapter on wounds, the author teaches that infection develops more readily in contused wounds than in any other type, on account of extensive devitalization. One must object to his advising a thorough scrubbing of a second degree burn with brush, soap and water; such statements are not modern. He also fails to mention the "open-air" treatment of burns. The classification of tumors and the surgical pathology are an admirable summary of the entire subject as at present understood. Regarding uterine myomas the author correctly states that "the old belief that they disappear at the menopause is untrue and dangerous. The danger of malignancy, though small, must not escape us." Writing on sarcoma, he warns us that "many of the notions held by some of the profession are due to ancient teachings that have been handed down from generation to generation, without an attempt to correct them in accordance with the advances made by pathologic study and clinical observation of patients before and after treatment, and by our ability to make accurate diagnoses, microscopically, long before a clinical diagnosis could be vouchsafed. Hence much that is untrue is still accepted and occasionally acted on as true.

The Biology of the Blood-Cells with a Glossary of Hematological Terms. For the Use of Practitioners of Medicine. By O. C. Gruner, M.D., Pathologist to the Royal Victoria Hospital. Cloth. Price, $6 net. Pp. 392, with 75 illustrations. New York: William Wood & Co., 1914.

"This work is intended to serve as a companion to any of the larger text-books on hematology. Special stress has been laid on the close relationship between changes in the blood-forming organs and the blood-picture as the clinician sees it, and also on the minute morphology of the various blood-cells, whether sessile or free-floating."

In these days the study of the development of the various types of cell seen in the circulating blood is assuming increased importance, owing largely to the epoch-making studies of Pappenheim and his followers. The proper interpretation of the presence of unusual cells or of variations in the number and kinds of normal blood-cells in the blood-picture of any disease may be made only when a thorough knowledge of the origin and developmental cycle of such cells is at hand. Gruner has attempted to present his material in such a way that the reader is led by gradual steps to a complete familiarity not only with the origin and development of the various cells, but also with the hematopoietic mechanism which leads to the appearance of abnormal cells in the peripheral blood. That he has accomplished his object in a thoroughly convincing manner is evident from a perusal of the work. The subject-matter of the book is divided into seven chapters, on the primordial blood-cell, the red blood-cell, the lymphocyte, the large mononuclear leukocyte, the neutrophil leukocyte, phlogocytes, and the cystoplastic phenomena of blood-forming tissues. Each of these chapters is written in such a clear and concise manner that the reader has no difficulty in grasping the various points dealing with the developmental and morphologic characteristics of the cells discussed. The glossary of terms at the end of the book is very complete and deserves special mention and reference. This book is one which should be in the library of all who have an occasion to examine blood-smears, and should be carefully studied by those who wish to enlarge their knowledge regarding the interpretation of the blood-findings in various diseases. It gives a thorough and convincing exposition of the accepted biologic theories of the origin and development of the blood-cells.

Les techniques anatomo-pathologiques du système nerveux: anatomie macroscopique et histologique. Par Gustave Roussy, Chef des Travaux d'Anatomie Pathologique à la faculté de Paris, and Jean Lhermitte, Ancien Chef de Laboratoire à la Faculté de Médecine de Paris. Cloth. Price, 5 francs. *Pp. 255. Paris: Masson et Cie, 1914.*

This little book contains a selected list of methods, which have been personally tested by the authors, for the gross and microscopic study of the nervous system in both normal and pathologic conditions. The selection is in general judicious and the directions clear; there are some new methods described and some remarkable omissions (for instance, no mention whatever of the Golgi method). It is a practical working manual, adapted for the needs of the beginner. "It is not a book for the library; its place is on the laboratory table beside the fixing fluids and stains."

Miscellany

Proteoses and Fever

Experiments calculated to show a relationship (should any such relationship exist) between the injection of proteoses into the animal organism and the development of fever symptoms are reported by Gibson in the *Philippine Journal of Science*, viii, B, p. 475. These experiments were undertaken on account of the conflicting views and theories of previous workers and because of their bearing on "peptone intoxication" and anaphylactic shock and the relation of these to the development of fever symptoms.

Von Pirquet and especially Friedberger have developed the theory that the phenomena of anaphylaxis play an essential part in the production of the symptoms observed in the contagious diseases. The symptoms declare themselves when the antibodies, elaborated by the organism, begin to react with the microbes. Mita and Friedberger have shown a relationship of fever in infections to anaphylaxis. These authors assert that the injection of minute amounts of foreign protein into guinea-pigs sensitized to that protein produces a marked rise in temperature following the characteristic fall. Successive injections yield temperature curves very similar to those of infectious fevers. In anaphylactic shock the symptoms resemble those which obtain during the intoxication resulting from intravenous injection of proteoses. There seems to be evidence also that the formation of anaphylatoxin is associated with the cleavage products of the protein antigen. Pyrexial action is asserted for proteoses prepared in the laboratory as well as for those elaborated by bacteria, both intracellular and extracellular substances so elaborated. If the extracellular substances are precipitated by alcohol or ammonium sulphate and injected into guinea-pigs, they excite fever. Such injections are more pyrogenic for tuberculous animals than for normal ones. When the proteoses are prepared in the laboratory they are not so pyrogenic in their action as those of bacterial origin. Klemperer considers that the cause of fever in such cases is not the introduction of proteoses but rather impurities of bacterial origin. Recently, Bordet has questioned the identity of anaphylaxis and "peptone" intoxication. He concludes from his experiments that there is not just ground for the theory of the production of poison by digestion and disintegration of the antigen. Loewit also believes that there is insufficient evidence for believing that anaphylactic shock and the "peptone" shock are identical. Auer and Van Slyke also bring forward additional evidence that the anaphylactic shock is not due to proteoses. The question of importance at this point is, whether the symptoms of "peptone" intoxication are due to the proteoses injected or to some substance which is physiologically active. Pick and Spiro have concluded that these effects are due to some substance of animal origin. Underhill verified their experiments. With this situation before him, Gibson considers the possibility of a substance other than that injected being responsible for the pyrexial symptoms following an injection of proteoses and their relation to anaphylaxis. Great care was taken in the preparation of the proteoses. They were made from four times reprecipitated caseinogen, recrystallized edestin and thoroughly washed pig fibrin. Rabbits and guinea-pigs were used as experimental animals. They were handled as little as possible, fed well and injected subcutaneously with aseptic precautions. Records of all animals, as to weight, sex, date of injection, temperature at time of injection and range of variation for from five to ten days were kept. Only two out of twelve experiments on guinea-pigs gave a definite pyrogenic reaction. The preparations mentioned above do not seem to be consistently pyrogenic for guinea-pigs; but in the experiments on rabbits no evidence of fever resulted from the proteose injections. Since there was practically no pyrexial effect, no relationship between anaphylactic shock and "peptone" intoxication was discovered. "It would seem then, that the primary cleavage products of pepsin-hydrochloric digestion, when prepared without drastic treatment, from purified and well-characterized proteins, never have more than a slight pyrogenic effect when injected subcutaneously into rabbits and guinea-pigs. Any temperature rise, if present, is insufficiently pronounced to permit a direct inciting rôle to be ascribed to such proteoses in the production of the severe naturally occurring fevers."

Drying Cultures of Lactic Bacilli

A press bulletin of the U. S. Department of Agriculture says that the general interest in fermented milks has stimulated the production of various kinds of tablets and capsules which are supposed to contain lactic-acid organisms in such quantities that the culture can be used to start fermentation in milk or to inoculate the digestive tract by direct consumption. These cultures, as well as those for butter- and cheese-making, are of value only when they contain the desired organism free from contamination and sufficiently active to start the fermentation before too great accidental contamination develops. The ideal form for such cultures is a dry state, sufficiently active to produce rapid growth when added to milk, and yet so dormant that the organism can be held a long time without losing its activity. This is difficult to attain and many dry cultures are practically inert. The most successful commercial cultures are sold in liquid form. The department has devised a method of preparing dry cultures which preserves to the greatest extent their activity. It consists in freezing the cultures and then drying them over sulphuric acid in a vacuum approximating 0.01 mm.. The activity of the dried cultures diminishes more rapidly the higher the moisture content. The loss in activity is slow at 0 C. (32 F.) and is more rapid as the temperature rises. Cultures of lactic acid bacteria at 30 or 37 C. (86 or 98.6 F.) become inactive in a short time. The *Bacillus bulgaricus* made by the freezing-vacuum method is active and curdles milk in twenty hours at 37 C. in the ratio of 1:100,000. Yeasts do not survive the process, as the powders obtained were very feeble.

Value of Vital Statistics

As an argument against the value of vital statistics as ordinarily gathered, E. Goodman, in the *California State Journal of Medicine*, quotes again the statement frequently made that fully 50 per cent. of ante-mortem diagnoses are disproved by post-mortem findings. He says that even if violent and accidental deaths, deaths from occupational diseases, from specific infections and other obvious causes can be established beyond a doubt, yet the great number of doubtful causes vitiates all results. He asserts that necropsy is the only thing that stands between vital statistics as a guess and vital statistics as a science. While the desirability of establishing the exact causes of death in all cases by necropsy is obvious, yet it cannot be agreed that the value of the "bookkeeping of humanity" depends wholly on this. Most cases of infectious disease, including tuberculosis and typhoid fever, are correctly diagnosed, as is cancer in the fatal cases. In these diseases it is highly important that statistics be gathered in order that the large view of their causation and propagation may be obtained and preventive measures devised. Many of the obscure conditions subject to frequent errors in diagnosis do not occur in a large number of cases. Accurate figures in such conditions as gastric ulcer, gallstones, nephritis and some of the heart conditions are a valuable aid in arriving at a correct conception of their general determining causes, but in the conditions named above, in the occupational diseases and in the accidental causes of death, mortality and morbidity statistics are most valuable, and these are now determined, when collected at all, with sufficient accuracy. To determine merely the birth- and death-rate is of great importance, and justifies any efforts to obtain universal and accurate registration. The verification of the causes of death by necropsy in every instance is out of the question, but to say that lack of this vitiates the value of all vital statistics is not a tenable statement.

Medicolegal

Authority of Superintendents to Employ Physicians to Render Services to Injured Employees—Summoning of Aid for Third Persons

(Ghio vs. Schaper Bros. Mercantile Co. (Mo.), 163 S. W. R. 551)

The St. Louis (Mo.) Court of Appeals says that the mere office of superintendent does not imply authority to contract for medical and surgical services rendered to third persons injured in its employ. But it is well settled that a superintendent may contract for medical and surgical services rendered to a third person, injured in the employ of the company, if it appears he possesses, and is accustomed to exercise, broad and comprehensive authority with respect to the conduct of the company's affairs in a general way.

Ordinarily, if one person requests another to perform beneficial services for him, and accepts and appropriates the benefits, the law implies a promise to pay the reasonable value. But this is because the services are of value to the person requesting the performance, and because, too, the law will presume that every person intends to pay for that which is wrought, at his instance and request, to his benefit. It is not the same, however, when one person merely calls a physician or a surgeon to attend a third person, for the dictates of humanity frequently induce one to do this, and, indeed, it may be the sick or afflicted person is at the time unable to speak for himself. Therefore it is the rule of decision that unless the relation of the person making the request is such as to raise the legal obligation on his part to call a physician and pay for his services, the law will not imply a contract to do so on a mere request.

Though such be true, however, it is not essential that there shall be an express promise to pay, even when one calls a physician to attend a third person with respect to whom no legal obligation obtains, if it sufficiently appears from the facts and circumstances in proof that the physician intended to charge for his services, and the person requesting him to perform the service intended to pay therefor. The distinction between an implied contract and an actual contract, though not an express one, which may be found by the jury from the facts and circumstances, as when it appears one party intended to charge and the other intended to pay, is recognized every day in the administration of the law. So, in this case, though no one in express words promised to pay the plaintiff for his services, rendered to an injured employee of the defendant, he might nevertheless recover on contract if the jury found as a fact that he rendered the services at the request of the defendant, with an intention on his part to charge, and that the defendant intended to pay therefor.

Physician's Willingness to Commit Crime Not Punishable—Nature of Rights—Inadmissible Evidence—Construction of Statute

(State ex rel. Spriggs vs. Robinson et al (Mo.), 161 S. W. R. 1169)

The Supreme Court of Missouri, Division No. 2, reverses a judgment of the circuit court sustaining the State Board of Health in suspending the relator or appellant from the practice of medicine and surgery in that state for a period of one year. The charge on which he was suspended was that he was guilty of "unprofessional and dishonorable conduct," in that he was willing to commit a criminal abortion. He had advertised in a local newspaper: "Practice limited to diseases of women and surgery. Office and private hospital," etc. The state statute under which he was suspended provides that the board may revoke licenses for, among other things, producing a criminal abortion, but the specifications in the act were not intended to exclude all other acts for which licenses may be revoked.

The court says that the appellant through his license to practice medicine, and through his ability and industry, had become possessed of at least a valuable privilege—perhaps a property right—which had been suspended by the action of the respondents for his alleged violations of the laws of the state; that it was not a mere shadowy privilege which might be revoked regardless of whether the possessor had violated the laws of the state, and the court found nothing in the brief of the attorney-general to intimate that the conviction and suspension of the appellant could be sustained on the advertisement which he published. Nor was hearsay evidence of another physician to the effect that the appellant bore the reputation of being a criminal abortionist sufficient.

The statute, in so far as it authorizes the revocation of licenses of physician, is highly penal and cannot be expanded or enlarged beyond its letter or spirit. Its general specification is directed solely against certain undesignated acts, not against evil thoughts or a willingness to perform wrongful acts. However reprehensible it may be for a physician to entertain a desire to commit abortion, his license cannot be revoked therefor unless by a written statute his desires are made the ground for subjecting him to that penalty.

Liability of Chartered Sewage Disposal Company for Maintaining a Nuisance

(State vs. Collingswood Sewerage Co. (N. J.), 89 Atl. R. 525)

The Supreme Court of New Jersey affirms a conviction of the defendant of maintaining a nuisance. The court says that the nuisance complained of was that, in the conduct of its sewage disposal plant, it permitted the generation of unpleasant and offensive odors, to the injury and discomfort of the community. It was a corporation, chartered under the Act of 1898 to collect, treat and dispose of sewage. To meet the state's case, the defendant took the position that, because it had secured the approval of its plans for the building and location of its plant, and had in every respect complied with all the requirements of the State Sewage Commission and the State Board of Health in the construction and operation of its plant, therefore it was immune to an indictment, even though there was faulty construction and operation of the plant which gave rise to offensive smells. But the court thinks the position taken by the defendant untenable. The legislature, in conferring on the defendant the privilege to treat sewage, did not grant with it a license to maintain a nuisance. Nor did the fact that the defendant constructed part of its plant under plans approved by the State Sewage Commission absolve it from liability for maintaining a nuisance. When the defendant discovered that the nuisance arose from faulty construction, its plain duty to the public was to amend such faulty construction, and not to go on continuing the nuisance. As there was some evidence from which the jury might properly have found that the nuisance complained of was the result of both a faulty construction and careless operation of the plant, the court properly refused to direct a verdict for the defendant. Nor was there error in a refusal to permit the defendant to prove the cost of the plant and that it was not a profitable concern; that it did not meet fixed charges, etc. The element of cost did not enter into the inquiry in any aspect of the case. No matter how much the plant might have cost, or how unprofitable it might be, neither element was sufficient to absolve a defendant from maintaining a nuisance arising from faulty construction or negligent operation of the plant. Moreover, the theory that, because the plans were drawn by engineers in the employ of the State Board of Health (which board, under an an act of 1908 amended in 1909, was vested with the powers and duties of the State Sewage Commission), recognized and approved by the board, therefore there could be no faulty construction, was palpably fallacious. When a plant is put into active operation and it is discovered that offensive odors are generated, which would not be the case if the plant were properly constructed, it is going to an unwarranted length to ask the court to assume that, because the plant was constructed under the approval of the State Board of Health, on plans of its engineers, therefore, as a matter of law and fact, there could be no faulty construction of the plant, and any nuisance generated thereby is a necessary incident of the business authorized by the legislature.

Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, June 22-26.

American Academy of Medicine, Atlantic City, June 19-21.
American Climatological Association, Atlantic City, June 19-20.
American Gastro-Enterological Association, Atlantic City, June 22-23.
American Laryn., Rhin., and Otol. Society, Atlantic City, June 19-20.
American Orthopedic Association, Philadelphia, June. 18-20.
American Proctologic Society, Atlantic City, June 22-23.
American Urological Association, Philadelphia, June 18-20.
Conf. of State and Prov. Boards of N. America, Washington, June 19-20.
Maine Medical Association, Portland, June 10-11.
Massachusetts Medical Society, Boston, June 9-10.
Montana State Medical Association, Lewistown, July 8-9.
New Jersey Medical Society, Spring Lake, June 29.
North Carolina Medical Society, Raleigh, June 16.

ASSOCIATION OF AMERICAN PHYSICIANS

Twenty-Ninth Annual Meeting, held at Atlantic City, N. J., May 12 and 13, 1914

(Continued from page 1748)

Splenectomy for Pernicious Anemia

Drs. Warren Coleman and John A. Hartwell, New York: Splenectomy was performed as a last resort. Ten weeks later neosalvarsan was administered. The use of neosalvarsan makes it impossible to draw any conclusion as to the effects of the splenectomy except in the interval before its administration. In this interval there was no evidence of more than temporary improvement. At the present time, April 24, six months after the operation, the patient, while looking better and feeling better, is just beginning to sit up.

Studies in Pernicious Anemia

Dr. Herbert C. Moffitt, San Francisco: The results from splenectomy have been variable. In eight cases death resulted either immediately or soon after operation. A number of other cases have not been improved. In still other cases reported in the literature, surprising improvement has taken place. In my case paresthesia, which was obstinate before operation, disappeared at once afterward. There are other striking changes in the blood regeneration which follow soon after operation in many cases.

Studies in Experimental Arteriosclerosis

Dr. I. Adler, New York: Dogs were injected, partly intravenously, partly subcutaneously, with various substances, such as epinephrin, nicotin, lead, diphtheria toxin and pure cultures of different species of bacteria, all with absolutely negative results. In a further set of experiments, dogs were fed with a number of substances, under varying conditions. and it is believed that some positive results were obtained, so that the aorta in some cases showed lesions which both macroscopically and histologically were closely analogous, if not absolutely identical with human arteriosclerosis.

Case of Recurrent Fever in Aortic Aneurysm

Dr. Alexander McPhedran, Toronto: A woman, aged 36, of irregular life and habits, complained of pain in the right chest. She had recurrent fever about every seven or eight days. The aortic arch was dilated and showed a pulsating aneurysm in the first left intercostal space. The temperature became normal and remained so and her general condition improved very much. She was treated with iodids, mercury and salvarsan.

Certain Tests of Renal Function

Dr. W. S. Thayer, Baltimore: When I have been able to correlate the anatomic and clinical observations, they have tended to fortify my previous opinion that the phenolsulphonephthalein test is a reliable one of considerable diagnostic and prognostic value, especially in the study of chronic nephritis.

DISCUSSION

Dr. Charles F. Withington, Boston: A man, brought into the hospital unconscious, showed unmistakable evidences of acute nephritis. There was a history of convulsions and of coma. Twenty-four hours after the patient was brought in the phenolsulphonephthalein output was 70 per cent. His condition proceeded to clear up and he went out about two weeks after he was brought in, showing a surprising phenolsulphonephthalein output, although manifesting signs of *nephritis.*

Dr. Joseph L. Miller, Chicago: A man came to the hospital, not very ill, in whose case a definite diagnosis of chronic interstitial nephritis was made. He was passing 2,000 c.c. of urine a day. We could not get a trace of phenolsulphonephthalein through in two hours. In forty-eight hours and up to the time he went into coma, he passed a large amount of urine, and at the end of forty-eight hours he went into coma and died. Necropsy showed a high degree of interstitial nephritis.

Syphilitic Nephritis

Dr. Alfred Stengel and Dr. J. Harold Austin, Philadelphia: We have examined the urine with the polarizing microscope 58 times from 46 cases. Of these 46 cases, 23 showed nephritis with an abundance of albumin and casts in the urine. Of these 23 patients, 6 had positive Wassermanns, 3 had strong presumptive evidence of syphilis, but no positive Wassermanns;14 had not the slightest evidence of syphilis. The 6 cases with positive Wassermanns all showed lipoids in the urine. The rest of the 46 cases studied were made up in part of nephritis cases of the interstitial or arteriosclerotic types, with only traces of albumin in the urine, and a few hyaline and granular casts, some with syphilis and some without, any number of syphilitic cases with no nephritis, and any number of control cases with neither syphilis nor nephritis. None of these cases showed lipoids in the urine. One of the six syphilitic cases with nephritis showing lipoids in the urine had not received any mercury.

In order to determine whether or not the common experimental degenerative nephritides of animals would be associated with lipoids in the urine, three rabbits were given uranium nephritis and one dog a chromate nephritis. The four experiments were negative; no lipoids were found in the urine. Further experiments with mercurial nephritis, phosphorus and chloroform lesions and syphilitic inoculations are in progress.

The Pathologic Evidence of the Relationship Between Gastric Ulcer and Gastric Carcinoma

Dr. Louis B. Wilson, Rochester, Minn.: Any existing disagreement as to the relationship between gastric ulcer and gastric carcinoma depends on (1) failure to understand the pathologic data, (2) inappreciation of the bearing on the clinical data, or (3) failure to appreciate the correlation existing between the two. Small gastric ulcers are usually simple, and large cauliflower-like cancers usually show little evidence of previous ulceration, but between these two lies a large group of ulcerated lesions of the stomach, some of which are ulcers only and others of which resemble ulcers in all respects, except that in addition they also show cancer. So far as the pathologist is concerned, he cannot positively distinguish, in many such specimens, between simple ulcer and ulcer plus cancer, except with a microscope. When, in such a specimen showing cancerous areas, no cancer-cells are found in the base of the ulcer, one is warranted in assuming that the ulcerative lesion preceded the cancer.

The Etiology of Some of the Infective Tropical Granulomas

Dr. Richard P. Strong, Boston: Among the infective granulomas which occur more commonly in certain tropical countries and which are perhaps of unusual interest from an etiologic point of view, are verruga peruviana, ulcerating granuloma of the pudenda, and frambesia. Verruga peruviana and Oroya fever have been considered to be merely different stages of the same disease, Oroya fever having been regarded as the initial stage of the granulomatous verruga stage. The two diseases, however, are quite distinct and have a very different etiology. Verruga peruviana is due to a virus which may be transmitted to some of the lower animals, while Oroya fever owes its origin to a parasite of the red blood-corpuscles. The two diseases also have a very different pathology. The etiology of ulcerating granuloma does not seem to be definitely determined.

(To be continued)

AMERICAN DERMATOLOGICAL ASSOCIATION

Thirty-Eighth Annual Meeting, held in Chicago, May 14-16, 1914

(Continued from page 1749)

Epithelioma of the Hand Following Traumatism, Resembling a Granuloma

Dr. Howard Fox, New York: The patient was a man of 48, whose previous history showed only an attack of measles when a child, and an attack of "blood-poisoning" in the left wrist, for which incision was made, and which healed at the end of sixteen weeks. Syphilis was denied. During the summer of 1911 he was bitten on the back of the right hand by a horse, which injury caused an open wound at the junction of the fifth metacarpel bone with the carpus, which healed in the course of two weeks. Five or six weeks later an open sore again appeared on the back of the right hand, which gradually extended in area and became red and swollen, with discharge and crust formation. When first seen, the right hand showed the characteristics of ordinary senile skin. The entire dorsal surface was swollen, edematous and tender, the swelling extending to the wrist and first phalanges. On this area were serpiginous, rather sharply bordered ulcerating and crusted lesions, extending from the knuckles to the proximal ends of the metacarpal bones. The central portion was covered with epidermis. By pressing on almost any portion of the back of the hand a considerable amount of thick, yellowish pus could be expressed. The clinical picture was that of a granuloma due to tuberculosis, blastomycosis, actinomycosis or possibly syphilis, complicated by an extensive suppurating cellulitis. Wassermann reaction was negative. A biopsy was then made, which showed the presence of a most typical squamous-celled epithelioma. Patient refused operation, and six Roentgen-ray exposures were given. He was also treated by wet dressings of potassium permanganate. Examination of the chest showed some coarse râles, slight dulness and diminished breathing. A roentgenogram of the chest indicated involvement from the level of the fifth dorsal down to the lower border of the ninth rib, the irregularity of the shadow indicating carcinoma. The patient lost weight and became cachectic. Dysphagia steadily increased, and after gastro-enterostomy for its relief the patient died.

Epithelioma of the hand is a comparatively rare condition, and in the vast majority of the cases occurs on the dorsal surface. In spite of being histologically, as a rule, a malignant type of cancer, it runs a slow and relatively benign course, seldom invading the lymphatic glands. The majority of cases develop on a basis of chronic inflammatory tissue; few arise after a single traumatism.

DISCUSSION

Dr. Alfred Schalek, Omaha: I had a case much like the one reported, but in my case the growth occupied the whole dorsum of the hand. I suspected malignant disease at first. I did not think of epithelioma because I had never seen a case of epithelioma in the hand. There was extreme pain. The growth was excised, and later a skin graft used, which was followed by recurrence. The patient was referred to a surgeon, who amputated the arm. After that I heard nothing more from him. In my case the process certainly was not benign. It looked to me to be very malignant.

Dr. W. A. Pusey, Chicago: I have seen a considerable number of epitheliomas on the back of the hand. My experience in general corresponds with Dr. Fox's, that such epitheliomas are relatively not very dangerous; but this has set me to thinking of one thing during the last few years, namely, why epitheliomas on the back of the hand occurring in Roentgen-ray skins are so excessively dangerous. I think it is a general fact that they are very liable to metastasis, and I would like to know why these lesions are dangerous, while ordinary ones are not. I have seen only one epithelioma on the palm, and that was an exceedingly interesting case.

Dr. M. B. Hartzell, Philadelphia: I have seen three or four patients in whom epithelioma has followed immediately on a slight injury. One occurred on the end of the nose of a woman between 50 and 60 years of age; a scratch, which never healed, was followed within a few weeks by a typical epithelioma. In another case the epithelioma occurred on the inner surface of the lip, following a traumatism inflicted by a dentist. I can also recall two cases of carbuncles on the back of the neck which were followed immediately by epitheliomas; that is, the wound left by the carbuncle never healed, and epithelioma developed on that site. Perhaps my experience has been unusual.

Dr. Martin F. Engman, St. Louis: The case of Dr. Fox seems to illustrate the theory of Ribbert uniquely, in which the normal epithelium through an ulcerating surface is misplaced and separated from its kindred, and thus undergoes atypical physiologic functionating, and rather quickly develops into an epithelioma. We see quite a number of cases of epithelioma of the back of the hand, but they usually originate from keratoses. I have seen several cases following Roentgen rays, and one case, I think, was fatal. This seems to be due to the poor regenerative qualities of the connective tissue, possibly, and the poor condition of the vessels. In a large proportion of these cases the epithelioma is preceded by secondary degeneration of the connective tissue, as found by White.

Dr. G. W. Wende, Buffalo: I have had a case of epithelioma on the palmar surface of the hand, following an injury. It developed soon after the traumatism, and grew rapidly. The course, from beginning to end, was less than a year and a half in length.

Dr. Udo J. Wile, Ann Arbor, Mich.: I think that attention might be drawn to the one notable exception, at least, to the relatively benign nature of epithelioma of the extremities. A number of cases following the ingestion of arsenic preparations have been reported. A few years ago, in looking up the literature, I was struck by the large number of arsenical growths, all of which were fatal.

Dr. Sigmund Pollitzer, New York: I think that the class of cases which forms the subject of Dr. Fox's paper may well be brought under that group of epitheliomas which are the result of misplacement of the epithelial cells, caused by the trauma. In this respect this class of cases does not differ materially from another class of epitheliomas that occur commonly as the result of a nevus, with cellular proliferation. I have seen several cases of nevi which depend on cellular inclusions, as moles and pigmented moles that have been treated by cauterization by one method or another, and I think that it is a bad practice. A cellular inclusion nevus should be treated like an epithelioma, or let alone. I should like to emphasize that point. Ninety-nine times out of a hundred nothing happens, but in the last case, if a few cells are left behind, they are subjected to terrific irritation from the treatment, and are apt to degenerate into a malignant process.

Dr. Henry H. Hazen, Washington, D. C.: I have had the opportunity of going over one thousand cases of epithelioma of the skin with Dr. Bloodgood, at Johns Hopkins Hospital. In that series forty or fifty originated in the limbs. In from two to ten years absolutely every case of prickle-cell epithelioma in which the glands were not taken out developed metastases, one or two as late as ten years. These cases were all proved malignant by microscopic examination. When we have a prickle-cell epithelioma, we always should excise the draining glands, in addition to taking out the epithelioma itself. We ought also to be careful about our method of doing biopsies on prickle-cell tissues. We leave both the lymphatics and blood-vessels open, and there is a good chance for any cancer-cells to escape into those vessels. We should use a dull knife, and if we cannot do that the wound should be immediately cauterized.

Dr. W. T. Corlett, Cleveland: My experience may have been unique, but next to the epithelioma of the face, I have encountered epithelioma of the back of the hand most frequently, and in the latter cases I have been impressed with the frequency with which metastases have occurred. I have attributed that to the fact that epithelioma on the face is usually a conspicuous lesion and relief is sought at an early time, whereas an epithelioma occurring on the hand is usually less conspicuous, and therefore is liable to be neglected.

Dr. W. A. Pusey, Chicago: I should like to question the accuracy of any statistics to the effect that every case of epithelioma of the back of the hand had metastases. I think from my experience it is certainly extraordinary and not usual. I should also challenge the statement that every epithelioma of the back of the hand should be followed by extirpation of the lymphatics. I do not think it is common sense or good or necessary surgery.

Dr. Henry H. Hazen, Washington, D. C.: I said prickle-cell epitheliomas, and about 80 per cent. are prickle-cell.

Dr. Howard Fox, New York: Dr. Engman referred to the short time between the traumatism and the development of the epithelioma. I do not think that six months is a very short time, but I just mentioned the traumatism as a suggestion; I think it would be impossible to prove that that traumatism with the resulting scar was the actual cause of the epithelioma. In one of the cases reported in the discussion the epithelioma appeared ten years afterward in the scar resulting from the bite of an animal. From the literature I have found that epithelioma occurs on the sole of the foot a good deal more often than on the palm of the hand, and I think that some of these cases have started in perforating ulcers. Certainly, the majority of cases of epithelioma of the extremities arise on a basis of some chronic inflammatory process, a lupus or a fistula, in connection with an osteomyelitis or a chronic dermatitis or a chronic ulcer of some sort, and a relatively small number arise on apparently normal skin. In regard to the malignancy of the cases occurring after Roentgen-ray work, according to the statistics of Brunn and Volkmann the most malignant type of epithelioma is that which develops on wheals and moles, congenital or those which appear later in life.

(To be continued)

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Eighth Annual Meeting, held in New York City, April 28-30, 1914

(Concluded from page 1751)

Cystitis Colli or Trigonitis

Dr. Henry D. Furniss, New York: Before the use of the cystoscope, these patients were all considered neurotics. Authorities have attempted to separate these cases of cystitis colli, referring to them as the non-inflammatory and to the other as the inflammatory type. In the non-inflammatory type the trouble at the neck of the bladder may be due to pressure from a retroverted uterus, a pelvic growth, cystocele or any other cause of pelvic congestion. I am of the opinion that these are coincident infections, and very seldom is there any other form of cystitis colli than that due to infection. The two principal infections are gonorrhea and colon bacillus. The best results are obtained by local treatment to the trigon with from 3 to 8 per cent. silver nitrate. The silver nitrate is neutralized by the urine.

DISCUSSION

Dr. John O. Polak, Brooklyn: I have found these infections more frequent than previous writers have been inclined to consider them. For several years I have discarded vulvar pads on these patients and have found a direct relation between the number of infections, sufficient to convince me that the vulvar pads should be discontinued. The intestinal tract is very apt to soil the vulvar pads and the wound is infected frequently from the vulva and thus infection of the genital tract results. I have found post partum a large number of cases of cholecystitis, the majority of them having subsided under the expectant plan of treatment to fall later into the surgeon's hands for operation for chronic gall-bladder inflammation. I have seen many cases of appendicitis during pregnancy associated with colon bacillus infection of the kidney; I have seen a number of cases of appendicitis in the puerperium. I have yet to see a case, however, of colon bacillus infection of the kidney that has necessitated the interruption of pregnancy.

Dr. Reginald M. Rawls, New York: I have gone over the reports of about four hundred cases in the literature and I find that in the great majority of colon bacillus infection cases recovery occurs spontaneously under conservative treatment. I would not be so radical as Dr. Davis in recommending operation in so many of these cases.

Dr. Paul Pilcher, Brooklyn: One of the most dangerous things we can do is to resort to surgery on a kidney whose pelvis is infected, and if we are going to cut a kidney in the presence of infection we should end in the majority of cases by taking the kidney out. Our results in the cases of pyelitis in pregnancy have been very good and in none have we operated on the kidney. We have drained many of them. As to infection of the intestinal tract from colon bacillus, Dr. Davis said appendectomy had been done in a number of these cases. I have found the greatest advantage of a permanent nature to come from appendicostomy rather than from appendectomy. As to infections at the neck of the bladder, I am not quite willing to call them cystitis colli. We seldom see the bladder infected in these cases. It is more a disease of the urethra than of the bladder. The treatment is applied to the neck of the bladder and the urethra rather than to the bladder itself.

Dr. Rosalie S. Morton, New York: I believe that this condition is one which is frequently overlooked. I have had under my care a young woman who has suffered for four years with this infection as a result of tears at the time of an instrumental delivery four years ago. If the attention of the profession were called to the frequency of this infection, I am sure that many of these patients would be saved from years of invalidism.

Methods of Treatment of Puerperal Infections Which Have Given Improved Results

Dr. Raleigh R. Huggins, Pittsburgh, Pa.: One hundred and twenty-five cases of infection following abortion after the second month of delivery have been treated in a conservative manner as far as the inside of the uterus is concerned, except when firm contraction of the uterus was not present, or when it could not be secured by the use of strychnin or ergot, or when the uterine cavity was firmly packed with iodoform gauze. This was done for the purpose of securing firm contraction if the uterus had not been emptied to facilitate the expulsion of its contents. The satisfactory use of magnesium sulphate locally in erysipelas led me to try it in the treatment of puerperal infection. At first it was given in a 1 per cent. solution of saline, about 30 grains at a time. Later it was learned that much greater quantities could be given safely if given slowly. Dr. Harrar of New York has used 250 grains without any alarming effects. Distilled water has been used instead of saline, and there have been fewer chills following its administration. There have been no accidents from its use, and I have given it more than 150 times. It is not bactericidal, but the tissues are stimulated to greater resistance.

The most rational treatment in the beginning of every case of sepsis starting within the uterus is based on a keen appreciation of the pathology. The most important indication is to secure firm contraction of the uterus. The second factor is a healthy respect for Nature's protected zone, in this way limiting the spread of the infection. Good drainage is also an important factor and is secured by placing the patient in a sitting position. Active general measures, such as attention to diet, elimination and fresh air are the important factors in the treatment of puerperal infection.

DISCUSSION

Dr. James A. Harrar, New York: I have used the intravenous infusions of 2 per cent. solution of magnesium sulphate in freshly distilled water in a number of cases of streptococcic toxemia, and in twelve cases of streptococcic bacteriemia proved such by repeated positive blood-cultures. Dr. Huggins has been extremely fortunate in securing such a large number of bacteriemias on which to test out the blood, and his results have certainly been extraordinary. In a large service, such as that at the Lying-In Hospital, of over 5,000 puerperal women a year including infected post-partum cases sent in by doctors and midwives, we have had in three years but 12 cases of bacteriemia in which to use the injections. That bacteriemia is more often suspected clinically than is proved by blood-cultures was demonstrated by our former pathologist, Dr. J. E. Welch. In 176 cases referred for blood-cultures prior to 1908, he secured positive cultures in but 46. Of these 46, 43 died under ordinary methods of treatment. Dr. Meltzer warns against the depression of the respiratory centers by magnesium sulphate, but in considerably over a hundred intravenous injections of from 200 to 400 c.c. of a 2 per cent. solution of the salt I have seen no toxic effects of any kind.

Dr. Samuel J. Druskin, New York: In the cases under discussion the blood-vessels extending to the mucous lining are filled with clots, but the middle and outer layers are not. We also find the same reaction in the normal uterus. These clots are soft and have a tendency to break down. It has been demonstrated that the chorionic villi penetrate the mucous membrane, split the inner-muscle fibers and bundles, and there is penetration of the blood-vessels near the inner surface of the uterus. The blood-vessels react by hyaline degeneration, and there is a tendency toward splitting of the coat of the blood-vessel. The effect of this is that when the uterus contracts after parturition, the inner muscular layer does not close up and press the blood out of the blood-vessels. The blood-vessels themselves, and even arteries do not react as they normally do, and they have a tendency to become thrombosed. It would appear that the condition is not primarily an infection due to micro-organisms, but that we have first closure of the blood-vessels due to thrombi which later on become infected.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Boston

May, XXXIV, No. 11, pp. 127-261

1 *Anterior Lobe of Pituitary Body in Its Relationship to Early Growth Period of Birds. R. Wulzen.
2 *Rôle of Nascent Oxygen in Regulating Activities of Enzymes in Animals and Plants. W. E. and E. L. Burge, Chicago.
3 *Physiology of Stomach. Influence of Smoking and of Pressure on Abdomen and on Gastric Hunger Contractions. A. J. Carlson and J. H. Lewis, Chicago.
4 *Id. Nervous Control of Gastric Hunger Mechanism. A. J. Carlson, Chicago.
5 *Adrenal Deficiency and Sympathetic Nervous System. R. G. Hoskins and H. Wheelon, Chicago.
6 Relation of Pulsation to Filtration. G. A. Gesell.
7 *Concerning Periodic Cardiovascular and Temperature Variations in Women. J. L. King, Baltimore.
8 *Influence of Curare on Vasomotor Reflex Thresholds. E. G. Martin and P. G. Stiles, Boston.
9 Factors Affecting Coagulation Time of Blood. W. B. Cannon and W. L. Mendenhall, Boston.
10 *Id. II. Epinephrin Injections. W. B. Cannon and H. Gray, Boston.
11 *Id. III. Stimulating Splanchnic Nerves. W. B. Cannon and W. L. Mendenhall, Bosotn.
12 *Id. IV. Pain and Emotional Excitement. W. B. Cannon and W. L. Mendenhall, Boston.

1. **Relation of Pituitary Body to Growth.**—Wulzen found that the growth of young fowl is retarded by the addition to the diet of fresh, unmodified anterior lobe of ox pituitary. This is shown both in body-weight and in length of the long bones. Involution of the thymus accompanies this retardation and may bear a causal relation to it. These effects are more marked in the males than in the females.

2. **Protective Rôle of Nascent Oxygen.**—The fact that pepsin and trypsin are oxidized by nascent oxygen and that the mucosa of the stomach and intestine possesses intense oxidative properties the Burges claim may be used to explain the protection of these organs from self-digestion during life; and the fact that diastase is destroyed by nascent oxygen offers an explanation of the observation that the amount of this enzyme is decreased during the day and increased during the night in plants. The fact that the autolytic enzymes are destroyed by nascent oxygen and that the tissues possess oxidative properties would seem to justify the assumption that normally there is a balance between the oxidative and autolytic processes in the living tissues. The fact that in certain pathologic conditions where autolysis is increased the oxidative processes are decreased is in accord with this assumption.

3. **Factors Influencing Gastric Hunger Contractions.**—The effects of smoking on the gastric hunger contractions were first studied by Carlson and Lewis in the case of a young man with a permanent gastric fistula. In his case smoking (cigars) invariably led to inhibition of the hunger contractions. But the man was not an habitual smoker, and the authors suggest that it is therefore possible that the results obtained on him were simply due to the condition of nausea or disgust that smoking usually produces in the novice and hence not applicable to persons used to smoking. The tests have been repeated on several habitual smokers.

In so far as smoking influences the gastric hunger contractions, this influence is in the direction of inhibition. This inhibition appears to depend on the intensity of stimulation of the nerve endings in the mouth, a cigarette or "mild" cigar causing only slight inhibition, while a "strong" cigar or pipe causes complete and prolonged inhibition even when the gastric hunger contractions are at their maximum. If the cigar or pipe causes very strong stimulation of the nerve endings in the mouth, the inhibition of the hunger contractions may continue from five to fifteen minutes after the cessation of the stimulation. Thus even a brief period of smoking may suppress an entire hunger period.

The subjective sensation of hunger is diminished or abolished parallel with the gastric hunger contractions. But it seems to the authors that even a "mild" smoke diminished the sensation of hunger rather more than one might infer from the slight depression of the contractions. This they believe, is probably due to the deviation of attention, the smoking acting partly as a "counter irritant." Smoking inhibits the gastric hunger contractions. It is practically certain even in the absence of direct experiments that moderate smoking does not inhibit the gastric movements of digestion. The reason for the difference in the action of the same condition on the empty and on the filled stomach is not clear from present data.

Experiments with constriction of the belt were made on three normal men. The tests were made with the subject standing up, sitting and lying on the back, and at all stages of the gastric hunger contractions. Strong contraction of the abdominal belt leads nearly always to inhibition of the gastric hunger contractions of weak or moderate strength, lasting from five to fifteen minutes. When the gastric hunger contractions are strong (the middle of a hunger period), constriction of the belt never causes complete inhibition. When the gastric hunger contractions are at their maximum in rate and amplitude, as is ordinarily the case near the end of a hunger period, no amount of belt constriction seems to influence the contractions. All three subjects agreed that the belt constriction appeared to diminish or interfere with the hunger sensation to a greater extent than seemed warranted from its effect on the hunger contractions. The authors state that belt constriction causes gastric inhibition, not by direct pressure on the stomach, but by direct stimulation of inhibitory nerves, or by mechanic (or sympathetic) stimulation of the adrenal glands, but through long reflexes.

4. Nervous Control of Gastric Hunger Mechanism.—According to Carlson moderate muscular activity (walking) has no direct influence on the gastric hunger mechanism. Intense muscular activity (running) inhibits the hunger mechanism in direct proportion to the intensity and duration of the exercise. Feeble hunger contractions may continue during moderate running. There appears to be some increase in the gastric tonus and hunger contractions as an after effect of moderate exercise. Stimulation of the cold nerve-endings of the skin does not affect the vagogastric tonus apparatus. If the stimulation is of sufficient intensity it induces (especially in man) a temporary inhibition of the gastric-hunger contractions via the splanchnic nerves. A similar inhibition is induced by strong stimulation of the cutaneous nerve-endings for warmth. There is a distinct increase in the gastric tonus and hunger contractions as an after effect of prolonged and intense stimulation of the cold nerve-endings of the skin.

The vagogastric tonus mechanism is not influenced by the condition of sleep, except in the way of augmentation, owing to the elimination of all inhibitory processes via the splanchnic nerves. The vagogastric tonus mechanism is not affected by intellectual processes or emotional states, except in so far as these cause inhibition of the gastric tonus and hunger contractions via the splanchnic nerves. It is clear, then, Carlson says, that in normal individuals (man, dog) the vagogastric tonus apparatus, at least so far as it concerns the empty stomach, is physiologically isolated from the exteroceptors and from many, if not all, central processes, while the splanchnic inhibitory apparatus is readily accessible to these processes. The biologic significance of this exceptional and unique isolation of the tonus apparatus of the hunger mechanism probably lies in the importance of the hunger mechanism being regulated on its positive side primarily by the state of nutrition; that is, through the blood, rather than by the fleeting changes in the nervous system.

5. Adrenal Deficiency and Sympathetic Nervous System.—Complete ligation of both adrenal glands of dogs at a single operation, Hoskins and Wheelon found, causes within four to six hours characteristic weakness of the skeletal muscles—including those of respiration. The weakness is shared to a marked degree by the cardiac muscle. At a time when cardiac weakness is strongly in evidence blood-pressure remains at or near its initial height. A compensatory activity of the vasomotor system therefore occurs. Vasomotor responses to faradic stimulation of the crural nerve persist. The vasomotor reactions to epinephrin also persist undiminished. The reactions to nicotin are often somewhat exaggerated as compared with preliminary observations with the same dosages. The vasomotor system, therefore, as well as the vascular musculature are unimpaired at a time when marked asthenia of skeletal and cardiac muscle has developed. This asthenia is sufficient alone to account for the final fatal results of adrenal extirpation. The authors found no evidence, therefore, that the sympathetic system suffers primarily in any degree from adrenal extirpation.

7. Cardiovascular and Temperature Variations in Women.—In the study reported by King, observations made on the pulse and temperature of women support the usually accepted theory of a rhythmic movement in the life processes; the highest point is reached three to four days before the menses, the lowest point about three days after their cessation. With one exception, blood-pressure records of the systolic, diastolic and pulse-pressures made on eleven women gave such irregular results that they cannot be regarded as supporting the wave theory. King's results, as far as they go, seem to indicate that there has been a tendency to overemphasize the inefficiency of women during the menstrual period.

8. Influence of Curare on Vasomotor Reflex Threshold.—The author's results may be summarized in the statements: 1. The thresholds for vasomotor reflexes are not, as a rule, markedly affected by curare. 2. The vasoconstrictor center shows signs of impairment of unity under the influence of the drug, causing it under certain circumstances to exhibit gradations of response not unusual in uncurarized animals.

10. Epinephrin and Coagulation Time of Blood.—Cannon and Gray found that epinephrin injected intravenously in small doses (0.001 mg. per kilo) and in larger doses subcutaneously, will shorten coagulation time to one-half or one-third the former duration. The prompt shortening of the process after small doses is changed after larger doses (about 0.03 mg. per kilo) to a lengthening and later a shortening, or to a lengthening alone. The effect of epinephrin on the clotting time is not associated with any corresponding effect on arterial pressure. If the blood is confined anterior to the diaphragm, or if the intestines and liver are removed, epinephrin in small doses does not cause rapid clotting. The addition of a small amount of epinephrin to drawn blood does not hasten clotting. Increase of dextrose in the blood to 0.3 or 0.4 per cent. does not cause the rapid clotting seen after epinephrin injection. The explanation is suggested that epinephrin accelerates the clotting process by stimulating the liver (and intestines?) to greater activity in discharging some factor or factors in coagulation.

11. Hastening Coagulation by Stimulating Splanchnic Nerves.—Stimulation of the splanchnic nerves, Cannon and Mendenhall found, results immediately, or after a brief delay, in shortening of the coagulation time of blood. The degree and the duration of the effect varies—clotting not uncommonly takes less than half the time it took before stimulation, and this period of rapid clotting may last from ten to thirty minutes. The stimulation usually produces less marked effects as it is repeated. If the adrenal is removed on one side, splanchnic stimulation on that side does not shorten the clotting time; whereas splanchnic stimulation on the other side is still effective. The faster clotting is therefore due to increased adrenal discharge. Since stimulation of nerves supplying the liver and intestines does not hasten clotting, and since increase of epinephrin has no effect in the absence of the liver and intestines, the shortened clotting after splanchnic stimulation is accounted for by the action of adrenal discharge on the liver (and intestines?). The variations in the effects in different animals can be accounted for by variations in the epinephrin content of the adrenal glands in confined animals.

12. Hastening Coagulation by Pain and Emotional Excitement.—Stimulation of afferent nerves (sciatic, crural), or major operations under light anesthesia, markedly shorten the coagulation time of blood. Emotional excitement is the occasion for very rapid clotting (sometimes in less than a half minute), which becomes slow (three to five minutes) when the splanchnic nerves are cut. Pain and strong emotions have been proved to evoke secretion of the adrenal glands; and epinephrin hastens clotting. Rapid coagulation may reasonably be considered, therefore, as another instance of adaptive reaction serviceable to the organism in the injury which may accompany pain or which may follow the struggle that fear or rage may occasion.

Annals of Ophthalmology, St. Louis

April, XXIII, No. 2, pp. 217-444

13 Psychic Disturbances Involving Eye. F. P. Lewis, Buffalo.
14 Study of Eye-Grounds in Psychoses. W. L. Benedict, Ann Arbor, Mich.
15 Sudden Bilateral Blindness Following Fit of Anger, with Resultant Permanent Bilateral Central (Paracentral) Scotomata. J. H. Claiborne, New York.
16 Eye-Strain and Ocular Discomfort from Faulty Illumination. W. B. Lancaster, Boston.
17 Ocular Symptoms Associated with Oxycephalus or Tour Skull. J. M. Patton, Omaha.

Archives of Internal Medicine, Chicago

May 15, XIII, No. 5, pp. 673-840

18 *Influence of Adrenals on Diabetic Metabolism. G. Lusk and J. A. Riche, New York.
19 *Experimental Studies on Blood-Serum of Cows Immunized against Tuberculosis. E. R. Baldwin, Saranac Lake, N. Y.
20 *Experimental Study of Intestinal Obstruction. J. A. Hartwell, J. P. Hoguet and F. Beekman, New York.

21 Classification of Amebas. C. F. Craig, Fort Leavenworth, Kan.
22 Physiologic Degeneration of Mesonephros. With Consideration of Antagonistic Action of Organs and Functional Mutation with Morphologic Persistence. H. Oertel, London.
23 *Method Developed for Obtaining Standard Wassermann Antigen. C. W. Field, New York.
24 *Study of Action of Atropin on Eosinophil Cells of Blood. W. W. Herrick, New York.
25 *Clinical Observations of Defective Conduction in Branches of Auriculoventricular Bundle. E. P. Carter, Cleveland.

18. **Influence of Adrenals on Diabetic Metabolism.**—The subcutaneous injection of epinephrin in a well-nourished dog twenty hours after the ingestion of a standard mixed diet sufficient for maintenance caused an increase of the respiratory quotient from 0.77 to 0.89. From the former quotient Lusk and Riche calculated that 16 per cent. of the heat production was at the expense of glucose, while from the latter it appears that 62 per cent. had that source. Before the injection of epinephrin, 0.8 gm. glucose was oxidized per hour, and after the injection 7.4 gm. per hour. The dog became muscularly active about half an hour after the administration of the drug.

The subcutaneous injection of epinephrin in a dog which had received 50 gm. of glucose resulted, in one experiment, in a respiratory quotient for a six-hour period of 0.98, and a combustion of glucose amounting to 7.7 gm. per hour, corresponding to 82 per cent. of the heat production of the period. On repetition of the experiment six days later, the respiratory quotient was found to be 0.99 during a period of five hours, and the oxidation of glucose amounted to 7.6 gm. hourly, being the equivalent of 85 per cent. of the total calories produced. The heat produced from the oxidation of 7.5 gm. of glucose is 28 calories, and the basal metabolisms of the dogs did not exceed 20 calories per hour. This is suggestive that epinephrin does not cause a diminution in the power of the organism to oxidize glucose.

The theory that epinephrin causes a production of sugar from fat, decreases the power of the organism to oxidize glucose through inhibition of pancreatic function, and stimulates the thyroid so that protein metabolism is increased, Lusk and Riche hold is untenable in any of its particulars.

19. **Blood-Serum of Cows Immunized against Tuberculosis.**—Baldwin's experiments relate to the properties of the serum of a cow repeatedly immunized against tuberculosis during a period of ten years. Six intravenous inoculations of living human cultures of tubercle bacilli, both of virulent and weak-virulent infectivity, besides numerous injections of all forms of tuberculin, were given to this cow. Specific agglutinin, precipitin, opsonin and complement-deviating antibody were demonstrated in varying degree in the serum, but never reached a high content. The presence of a bacteriolysin was not demonstrated; neither was a bacillicidal effect recognized either in the serum or leukocytes. Living human tubercle bacilli "sensitized" with the immune serum showed increased infective power in guinea-pigs and rabbits as compared with normal cow-serum. The increased infective power was manifested by earlier and more marked reactions or inflammation following inoculation, and a wider spread of the disease than in controls. This acceleration of infection was not manifest unless the cow had recently received injections of pulverized bacillus residue, but the immune-serum-agglutinin titer was not always greater than the normal cow-serum. To explain the apparent paradoxical action of the immune serum, it is suggested that the strongly agglutinated bacilli were protected from injury by the leukocytes of the inoculated animal by reason of the clumping. The bacilli were presumably phagocyted in large masses, but more difficult of digestion for that reason. It may also be suggested that the bacilli laden with antibody (opsonin) were more rapidly phagocyted and scattered, but owing to the resistant wax were not digested in sufficient numbers. A "sensitized" *living* tubercle-bacillus vaccine is not safe or practicable when prepared from immune bovine serums, considering the above-mentioned results.

20. **Study of Intestinal Obstruction.**—The results of their investigations of intestinal obstruction are summarized by the authors as follows: There are two factors at work in producing the symptoms and causing death in this condition. First, the loss of water from the tissues, due to the excessive drain into the bowel in response to the irritation set up by the retained secretions. This water may be replaced by subcutaneous injection of normal saline solution, and the symptoms caused are thus entirely controlled with a saving of life. Second, the entrance into the circulation of poisonous materials, which occurs only when the mucosa of the bowel is damaged. This damage results largely from the trauma inflicted by the overdistention acting on the circulation, but possibly also by the chemical action of the digestive ferments stagnated above the obstruction. Such a damage having resulted, there occurs a bacterial invasion into the bowel wall with a death of tissue cells (which is invariably demonstrable by microscopic examination), and in this process the poisonous substances are elaborated. The action of these poisons is apparently not influenced by the administration of saline subcutaneously. The absorption of a poison from any source whatsoever, so long as the mucosa remains intact, is not a factor. The development of a bacteriemia as a cause of death is excluded.

23. **Method for Obtaining Standard Wassermann Antigen**—Field uses the extract from guinea-pig hearts because a larger number can be used for each batch of antigen, so that the individual factor is reduced to the vanishing point.

24. **Action of Atropin on Eosinophil Cells of Blood.**—Herrick found that atropin in ordinary, non-toxic doses has no striking influence on the eosinophil cells of the guinea-pig's blood. Given in toxic doses resulting in loss in weight and other signs of disturbed nutrition, and particularly when such doses are repeated as often as every twelve hours, there is a diminution in the number of these cells, and the eosinophilia following interval injections of serum is diminished or absent. It is probable that this effect of atropin is not specific, but is the depression of a highly specialized function by the general effect on nutrition of large amounts of a strong poison.

25. **Defective Conduction in Branches of Auriculoventricular Bundle.**—Carter analyzed the reports of twenty-two cases. He found that in the presence of lesions involving the conductivity of the branches of the auriculoventricular bundle, a distinct and characteristic type of electrocardiogram is obtained. To the ventricular contractions on which these depend the term *aberrant* may be applied. This type of electrocardiogram is frequently associated with aortic valve disease; it is distinct from that of hypertrophy predominant in one ventricle.

Bundle-branch defects are usually accompanied by defects in the main trunk, suggesting that the junctional tissues as a whole have a special pathology. Carter claims that the evidence is too slight to admit of any definite conclusions as to the relation between lesions of the bundle branches and the occurrence of extrasystoles, and that the electrocardiographic pictures of aberrant beats are probably of considerable prognostic importance.

Arkansas Medical Society Journal, Little Rock

May, X, No. 12, pp. 297-328

26 Meningitis. J. B. McElroy, Memphis, Tenn.
27 Organized Medicine. P. Hunt, Texarkana.
28 Preservation of Public Health. L. H. Lanier, Texarkana.

Boston Medical and Surgical Journal

May 21, CLXX, No. 21, pp. 781-820

29 Feeble-Mindedness as Leading Social Problem. E. E. Southard, Boston.
30 *Under What Conditions Is Diagnosis of "Tuberculosis" in Children Justified? J. B. Hawes II, Boston.
31 Causes and Their Relation to Treatment of Lateral Curvature of Spine. Z. B. Adams, Boston.
32 Nitrogenous Metabolism in Case of Chronic Myelogenous Leukemia. H. W. Goodall, Boston.
33 Aural Vertigo. D. H. Walker, Boston.
34 Report of Leukocytic Inclusion Bodies. L. W. Hill, Boston.
35 *Poor Health in Child: Some Developmental Influences and Their Importance to Adult. J. Bryant, Boston.

30. **Diagnosis of "Tuberculosis" in Children Justified.**—In the absence of advanced tuberculosis or a recent infection with some acute disease which might cause a negative reaction, Hawes claims that a diagnosis of tuberculosis is rarely justified unless there is a positive skin tuberculin reaction.

Constitutional signs and symptoms are usually present and require careful study and investigation. If such symptoms are absent, a definite diagnosis is unwise, although this should not interfere with placing the child under proper treatment. Signs referred to the chest and lungs are of interest and value, if present; if absent, their absence should not preclude a definite diagnosis. If present without constitutional disturbance, look out for chronic influenza and pneumococcus infections. Positive roentgenographic evidence is of value in conjunction with other evidence. Diagnoses based on the roentgenogram alone are apt to be wrong, and are unjust to the patient.

35. **Poor Health in Child.**—Adhesions, ptoses and other demonstrable physical defects, according to Bryant, are of very common occurrence at all ages in both sexes, but the frequency of these defects in the adult is not markedly greater than in the child. It is not improbable that such defects may stand in a causal relation to some at least of the disabilities of the child and the adult. An anomalous ligament of Treitz may be a factor in obstruction of the duodenum. A simple double measurement of the thorax is presented, which is likely to prove an aid in the recognition of certain intra-abdominal abnormalities. This measurement is in a variable degree an indicator of physical efficiency, and is useful after the age of 5 years. The treatment of developmental defects is primarily non-surgical, and if properly carried out in the child is preventive, in that it will result in creating an adult not only personally more efficient, but one who may entertain the hope of having physically more perfect children.

Canadian Medical Association Journal, Toronto

May, IV, No. 5, pp. 371-468

36 Auto-Infection Associated with Intestinal Canal. G. E. Armstrong, Montreal.
37 Acidosis. V. E. Henderson, Toronto.
38 *Mentally Defective. G. S. Mundie, Montreal.
39 *Destruction of Sebaceous Glands, Sweat Glands, Hair Follicles and Diseases Thereby Cured. A. H. Pirie, Montreal.

38. **Mentally Defective.**—Mental deficiency is a defect of the brain, not a disease. It cannot be cured, but the condition of the child can be improved to a greater or less degree by careful and suitable treatment and training. The greatest etiologic factor is heredity; other important factors are the condition of the mother during gestation, tuberculosis, alcoholism and injuries after birth. Mundie urges that all mental defectives should undergo a thorough medical examination, and any defect in vision, hearing or enlarged tonsils and adenoids corrected. Training should be carried out in institutions, and the teaching should be objective.

39. **Destruction of Sebaceous Glands.**—The following doses of Roentgen rays are prescribed by Pirie, for treatment of the conditions mentioned: Sycosis: 10 X one application to the diseased area. Acne vulgaris: 3 X to the diseased area on three consecutive days. Wait for three weeks and repeat. Continue this till six treatments have been given. Tinea tonsurans: 10 X to the whole scalp, one treatment only. Rodent ulcer: 10 X once a month till ulcer is healed, then once a month for six or twelve more treatments, or 30 X or 40 X for one treatment only. Hyperidrosis: 10 X once a month for four months. Then 8 X for two more treatments. Hypertrichosis: As for hyperidrosis. Cheloid: 3 X once a week for six to twelve months.

Delaware State Medical Journal, Wilmington

March, V, No. 4, pp. 1-26

40 Gonorrhea in Female—Its Gravity: Far-Reaching Results: Prophylaxis: Treatment. E. E. Montgomery, Philadelphia.

Georgia Medical Association Journal, Augusta

May, IV, No. 1, pp. 1-32

41 Chronic Suppuration of Middle Ear. F. M. Cunningham, Macon.
42 Salvarsan in Treatment of Syphilis and Parasyphilis of Nervous System. J. N. Brawner, Atlanta.
43 Physician—His Duties and Obligations. R. B. Barron, Gray.
44 Pituitrin. M. T. Benson, Atlanta.
45 Infant Mortality. N. M. Moore, Augusta.
46 Local Anesthesia. R. Duffy, Plant City, Fla.

Indiana State Medical Association Journal, Fort Wayne

May 15, VII, No. 5, pp. 195-254

47 Need of State Detention Hospital for Early Diagnosis and Treatment of Acute Mental Diseases. F. M. Terflnger, Logansport.
48 Crime as an Expression of Feeble-Mindedness. D. C. Peyton, Jeffersonville.
49 *External Bone Plating. H. R. Allen, Indianapolis.
50 Paratyphoid and Typhoid. W. Shimer, Indianapolis.
51 Colonic Alimentation. A. Graham, Indianapolis.

49. **External Bone Plating.**—Allen recommends an external plate poured and cast over the heads of nails whose shafts penetrate two hard layers of bone. This external cast is melted or the shafts of the nails cut as soon as bone union is established. The nails it is claimed are withdrawn as easily and as painlessly as removing sutures after an external wound heals. After several years' experience with projecting wires and nails, Allen has thus far not had a single case of infection. In removing or casting the external plate there is little danger of burning the patient, since the metal Allen uses is a low-melting alloy. It is composed of a combination of metals that take a hard tough temper if cooled suddenly, and becomes more or less brittle if cooled slowly.

Concerning the nails or pins or wires, Allen recommends long, thin, small-headed wire nails or brads and drills that make neat fitting holes. The nails should pass through two layers of hard bone, because this provides much more strength than can be secured by five or ten times as many screws that merely have 1/16 to 3/16 of an inch bearing in hard bone, while the greater proportion of the screw length is left projecting into soft bone-marrow or cancellous tissue. The nails, unlike the screws, should never be parallel. The nails may be made of any good strong metal or may be plated with nickel or silver or other metal. They may have round or polyhedral sides, with smooth or uneven shafts, with or without projections or bends. The ends may be alike or unalike, a head at one end and a point at the other, or terminating in bends or knobs, or eye-holes, or notches, or have castings on their end or ends.

An open incision is made for observing the fractured zone. Holes are drilled and nails put through the holes about 1 inch or more from the fractured zone. The bones are set accurately by hand under direct vision and digital contact; while accurately set, the cast is made. If the work is properly done the bones remain in accurate position. If the soft tissues bind against the shafts of the nails, cut the soft tissues and relieve the tension. Let the soft tissues fit loose about the projecting nails, because this means unqualified comfort after the patient comes out from the anesthesia. Allen always uses an auxiliary splint made out of wire and adhesive plaster.

Iowa State Medical Society Journal, Washington

May, III, No. 11, pp. 697-799

52 Infections from Gas Bacilli. W. W. Bowen, Ft. Dodge.
53 Myocarditis. W. L. Downing, Moulton.
54 Chronic Interstitial Nephritis. H. M. Vinson, Ottumwa.
55 Pneumatic Rupture of Bowel. J. D. Blything and P. A. Bendixen, Davenport.
56 Diagnosis and Treatment of Fractures Involving Joint. A. P. Stoner, Des Moines.
57 Indications for Use of Lane Plate. J. W. Martin, Des Moines.
58 Model Laboratory for General Practitioner. H. Albert and M. E. Scheetz, Iowa City.

Journal-Lancet, Minneapolis

May 1, XXXIV, No. 9, pp. 231-259

59 Fractures in Neighborhood of Joints. (To be continued.) J. B. Murphy, Chicago.
60 Case of Septic Thrombophlebitis of Pelvic Veins. C. F. Lewis, Austin.
61 Rubber-Tube in Reconstruction of an Obliterated Bile-Duct: an Hepaticoduodenostomy. A. T. Mann, Minneapolis.
62 Mind in Medicine. C. Johnson, Willmar.
63 Report of Case of Traumatic Separation of Symphysis Pubis. F. R. Wright, Minneapolis.

May 15, No. 10, pp. 261-287

64 Fractures in Neighborhood of Joints. (To be continued.) J. B. Murphy, Chicago.
65 Operative Treatment of Fractures Demonstrating Use of Steel Plates for Correction of Bad Fractures. A. E. Benjamin, Minneapolis.

Journal of Medical Research, Boston

May, XXX, No. 2, pp. 87-260

66 *Studies in Anaphylaxis. VI. Study of Cellular Theory by Graphic Method. R. Weil, New York.
67 *Does Internal Administration of Potassium Iodid Have Any Effect on Thyroid Grafts in Guinea-Pigs? C. Smith, St. Louis.
68 Leprosy: Flies in Relation to Transmission of Disease. J. A. Honeij and R. R. Parker, Cambridge.
69 *Serologic Investigations in Typhus Exanthematicus. B. Jablons, New York.
70 Experiments on Cavity Formation and Fever in Tubercular Rabbits. I. Ayer, Philadelphia.
71 *Experimental Study of Relation of Bile to Ulceration of Mucous Membrane of Stomach. G. M. Smith, St. Louis.
72 *Statistical Study of Normal Growth, Atrophy and Hypertrophy of Middle Coat of Radial Artery. A. H. MacCordick, Montreal.
73 *Neuroblastomata: with Study of Case Illustrating Three Types That Arise from Sympathetic System. H. R. Wahl, Cleveland.

66. **Studies in Anaphylaxis.**—The anaphylactic condition, Weil claims, is entirely dependent on the sensitization of the cells of the body. All conditions which in any way influence the degree of sensitiveness of the cells in the same degree alter the anaphylactic state, or sensitiveness, of the animal. The presence of immune bodies in the blood, whether in large or in small amounts, does not in the slightest degree contribute toward the production of the anaphylactic response in the guinea-pigs.

67. **Administration of Potassium Iodid.**—Smith found that the administration of potassium iodid to a guinea-pig in which a piece of its own thyroid gland has been transplanted does not seem to have any marked effect on the behavior of the graft. He did not find atrophy of the grafts, as reported by Cristiani, after the use of thyroid tablets. However, thyroid grafts show early central necrosis. The peripheral acini only remain intact. Regeneration takes place by the growth of thyroid tissue from the peripheral acini toward the center.

69. **Typhus Exanthematicus.**—The sera of patients infected with Typhus exanthematicus, Jablons claims, give the Wassermann complement-deviation test, as observed in syphilis, framboesia, leprosy, scarlet fever and malaria. This reaction, he says, need not be carried out with typhus organ extract; since the components that give the Wassermann syphilis test also give it here, and is therefore not specific for this disease. The absence of a positive Widal agglutination test in the presence of an epidemic he considers of value in making the diagnosis. The absence of positive bacteriologic findings and the presence of the Wassermann complement-deviation test point to the fact that the cause of the disease is to be sought for among the class of protozoan organisms.

71. **Experimental Study of Bile.**—When introduced into the stomach of the cat or the dog, Smith found that bile in the presence of an excess of 0.5 per cent. hydrochloric acid may cause injury to gastric mucous membrane, whereas bile 0.5 per cent. hydrochloric acid introduced alone into the stomach is without harmful effect. Lesions of the gastric mucous membrane produced by bile in the presence of an excess of 0.5 per cent. hydrochloric acid consist of necrosis of epithelium and interglandular tissue with hemorrhages into the mucous membrane, as a result of which small superficial ulcers may form. Ulceration of gastric mucous membrane, following the introduction of bile and hydrochloric acid into the stomach injected by way of the duodenum, is produced most readily between the third and the fifth hour after meals; least readily in the fasting stomach or shortly after the ingestion of food. If confined in the fasting stomach by ligating the esophagus and the duodenum, bile in the presence of an excess of 0.5 per cent. hydrochloric acid is more toxic for gastric epithelium than either bile alone or bile in the presence of an alkaline solution, such as 0.5 per cent. sodium carbonate. The presence of mucus in the stomach protects gastric epithelium against injury by bile and hydrochloric acid.

72. **Middle Coat of Radial Artery.**—MacCordick claims that the arterial musculature grows like other tissues, increasing both in the number and the size of the individual fibers. It appears to reach its optimum normal development between the ages of 20 and 30 years. While this is so, it retains its power of growth and proliferation throughout life, or certainly up to 76 years. It exhibits well-pronounced capacity to undergo both individual hypertrophy, that is, increase in size of the individual fibers, and numerical hyperplasia, that is, increase in the number of its constituent fibers. Of these, numerical hyperplasia is the more frequently encountered, and this particularly in cases of general arteriosclerosis and chronic nephritis. In the medical overgrowth of general arteriosclerosis, "zonal hyperplasia" is occasionally a marked feature—a numerical hyperplasia showing itself particularly in the inner zone of the media. In like manner the arterial musculature may exhibit both atrophy and numerical hypoplasia. These conditions may be either generalized or local. There are indications that the hypertrophied and hyperplastic media is liable to give place to a condition of atrophy.

73. **Neuroblastomata.**—Nerve tissue may give rise to new growths, which are properly called neuroblastomata. They may occur in any part of the nervous system, and Wahl says are of two types, according as they are composed chiefly of differentiated or undifferentiated elements. The neurocytoma is the undifferentiated type arising in the cerebrospinal nervous system. The corresponding type derived from the sympathetic system is the malignant neuroblastoma of the sympathetic nervous system or the "sympathoma embryonale." The ganglioneuroma and the chromaffin tumor represent the differentiated nerve growths, the latter taking its origin only in the sympathetic nervous system, the former arising also in the cerebrospinal nervous system. Most neuroblastomata, especially of the undifferentiated type, arise in the sympathetic nervous system.

Maine Medical Association Journal, Portland

May, IV, No. 10, pp. 1841-1882

74 Conservative Treatment of Chronic Suppurative Otitis Media. J. H. Allen, Portland.
75 Conservation of Vision. F. Y. Gilbert, Portland.

Medical Record, New York

May 23, LXXXV, No. 21, pp. 921-966

76 Progress of Education of Deaf and Dumb, and Some of Difficulties of Aural Instruction. N. J. P. Van Baggen, Hague, Holland.
77 *Calcium Therapy of Tuberculosis. M. Kahn, New York.
78 Pulse-Pressure in Diagnosis and Prognosis. J. S. Lankford, San Antonio, Tex.
79 French Aspect of Functional Liver Testing. M. E. Rehfuss, Philadelphia.
80 *Report of One Hundred and Twenty-Eight Cases of Scarlatina Treated by Vaccines and Method of Milne. E. C. Schultze and L. A. Goldberger, New York.
81 Study of Bacteriology of Posterior Nasopharynx in Scarlatina. N. S. Ferry, Detroit.
82 *Experiences with Bacterial Vaccines in Scarlatina. G. L. Kiefer and N. S. Ferry, Detroit.
83 Retroperitoneal Hernia of Appendix into Ileo-Appendicular Fossa. I. Seff, New York.

77. **Calcium Therapy of Tuberculosis.**—In looking over the mass of literature on this subject, Kahn says one is left in doubt whether the use of lime in the treatment of tuberculosis is to be recommended. There is, however, no danger in its use, and according to the observations of a number of physicians, it is of marked benefit.

80. **Scarlatina Treated by Vaccines and Method of Milne.**—One hundred and twenty-eight scarlet-fever patients were treated by Schultze and Goldberger, with a vaccine prepared from the *Micrococcus "S"* (Schultze). In addition to the vaccine injection, all the patients received a preliminary course of eight or ten doses of calomel, 1/10 to 1/4 gm., and castor oil or citrate of magnesia, and also had their throats swabbed with a 10 per cent. solution of phenol in oil and their bodies rubbed with a 10 per cent. solution of eucalyptus in oil, as advocated by Milne. A few patients after having been subjected to Milne's treatment, passed smoky urine, an evidence of too great absorption of phenol. The authors temporarily discontinued the use of phenol and the urine promptly cleared. They then diminished the strength of the phenol solution to 5 per cent. and have been using the 5 per cent. strength ever since, with no untoward effects. Milne advises painting the tonsils with phenol solution every two hours for the first twenty-four hours, later diminishing the frequency according to the appearance of the throat.

The authors suggest painting the posterior pharyngeal wall, as well as the tonsils, and continue painting until cultures from the throat show no more "S" cocci. The rubbing in of the eucalyptus oil they found was very soothing, and in many cases relieved the intense itching, which accompanied desquamation. The phenol swabbing of the throats and the rubbing in of eucalyptus oil in the bodies were continued throughout the course of the disease, and in a few cases were also used as a prophylactic measure on some of the healthy members of the family with very good result. The vaccines used were three in number, composed of the following organisms: (1) *Micrococcus "S,"* 400 million per c.c.; (2) streptococcus, 400 million per c.c.; (3) *Micrococcus "S"* and streptococcus (combined), 400 million per c.c. In 103 of the cases only culture "S" vaccine was injected. The other twenty-five cases received the *Micrococcus "S"* and streptococcus vaccine (combined), but as the results obtained by the use of the combined vaccine did not seem to be any better than with the culture "S" vaccine alone, the use of the combined vaccine was discontinued. The dosage of each injection was estimated according to the age of the patient and the severity of the disease.

Of the 103 cases that were given only "S" vaccine, 55 received 1 c.c., 41 received 2 c.c., 5 received 3 c.c., and 2 received 4 c.c. Of the 25 cases that were given the combined vaccine, 10 received 1 c.c., 10 received 2 c.c., 2 received 3 c.c., 2 received 4 c.c. and 1 received 7 c.c. In 121 of the whole series of 128 cases, only one injection was found necessary. Of the other 7 cases, 3 cases received two injections, 2 cases received three injections and 2 cases received four injections. The necessity for reinjecting a patient was judged by the reaction obtained from previous injections.

In most of the cases the reaction was rather striking. The temperature fell by crisis, reaching normal in from twenty-four to seventy-two hours; the general condition of the patient improved markedly; whereas, before injection, many of these patients "looked sick," soon after the injection, however, their general mental and physical conditions showed such improvement that their facial expressions were those of well-being rather than of severe sickness; usually they felt hungry and cried for food, although in some cases the rectal temperature registered 104 or 105 degrees. Of the 128 cases, there were 2 deaths (1.5 per cent.). Seven were complicated with diphtheria. Complications were: adenitis, 7 (5.46 per cent.); nephritis, 7 (5.46 per cent.); otitis media, 3 (2.34 per cent.); arthritis, 3 (2.34 per cent.); pneumonia, 1 (0.86 per cent.); measles, 1 (0.86 per cent.); arthritis and endocarditis, 1 (0.86 per cent.); total, 20 (15.62 per cent.).

82. **Bacterial Vaccines in Scarlatina.**—The bacterial vaccines employed by Kiefer and Ferry were as follows: A vaccine composed of streptococci isolated from the nasopharynx of individuals suffering with typical symptoms of scarlatina; a vaccine composed of an organism isolated from the same situation, called *Micrococcus "S,"* and a vaccine composed of a mixture of the two. These vaccines which were polyvalent, being composed of several strains of each organism, contained 400 million organisms per c.c. each. Two lines of treatment were undertaken: prophylactic and curative, the nurses receiving the prophylactic treatment and the patients the curative. For curative purposes the three vaccines were used as described, while, for prophylactic purposes, the *Mic. "S"* vaccine alone was tested.

The patients treated were proportioned as follows: Those receiving the streptococcus vaccine, 29; the *Mic. "S"* vaccine, 44; and the combined vaccine, 33. The vaccines were given about every two or three days, starting with one-half a cubic centimeter and increasing the dose as the symptoms warranted; and the treatment, as a rule, was continued until the termination of the case. No set rules for the course of treatment were adhered to; this was left entirely to the judgment of the physician in charge. The vaccines which contained the streptococci had an advantage over the ones containing the *Mic. "S"* alone, as well as over the usual expectant treatment Whether the *Mic. "S"* bears any relation to the disease, it would appear from the study of these few cases that, as a curative agent, a vaccine composed of this organism alone would not be indicated. This is also partly borne out by the fact that the *Mic. "S"* is more easily isolated and is found in larger numbers in the early stages of the disease, and has not been isolated from any of the discharges. For prophylactic purposes the *Mic. "S"* vaccine was given in three doses of increasing strength with three- to five-day intervals between doses. The doses contained 200, 400 and 800 million bacteria, respectively. Up to the time of starting this work six nurses out of about 100 had contracted the disease. However, since the introduction of this vaccine as a prophylactic measure among all nurses who had not already had the disease, not a case has been reported. It is interesting and rather significant also that during a period of three months when the prophylactic treatments were discontinued, four out of about twenty nurses became infected.

Military Surgeon

May, XXXIV, No. 5, pp. 401-500

84 "Field Service Regulations, U. S. Army, 1914," and "Organization Tables, U. S. Army, 1914." E. E. Persons, U. S. Army.
85 Wounded at Ojinaga. L. C. Duncan, U. S. Army.
86 Report of One Hundred Wounds, Received in Battle of Nuevo Laredo, Jan. 1 and 2, 1914. H. A. Phillips, U. S. Army.
87 Incinerators at San Antonio Maneuver Camp. F. W. Foxworthy, U. S. Army.
88 Importance of Blood-Pressure Readings in Annual Examinations of Field Officers. R. H. Pierson, U. S. Army.
89 Army Medical Corps. H. H. Baketel, U. S. Army.

Mississippi Medical Monthly, Vicksburg

May, XIX, No. 1, pp. 1-22

90 Hypopituitarism. J. B. McElroy, Memphis, Tenn.

Northwest Medicine, Seattle, Wash.

May, VI, No. 5, pp. 121-154

91 Recoverability of Insane. W. House, Portland, Ore.
92 Psychic Mind in Medicine. W. N. Pugh, Salt Lake City.
93 Urobilin in Urine. G. Baar, Portland, Ore.
94 Direct Transfusion of Blood with Special Reference to Its Use in Pernicious Anemia. W. C. Speidel, Seattle.
95 Case of Status Epilepticus Cured by Decompression Operation. D. A. Nicholson, Seattle.
96 New Hand-Driven Circular Bone Saw Including Flexible Shaft. H. A. Shaw and J. T. Mason, Seattle.
97 Medical Defense by State Association. E. E. Maxey, Boise, Ida.

Ohio State Medical Journal, Columbus

May, X, No. 5, pp. 263-326

98 Results of Treatment of Epilepsy with Crotalin. M. L. Austin, Gallipolis.
99 Case of Renal Hematuria, with Three Anomalous Renal Arteries. C. M. Harpster, Toledo.
100 Infant Welfare Campaign and Work Done in Cleveland. C. W. Wyckoff, Cleveland.
101 Intestinal Stasis—Internal Administration of Paraffin Oil. R. R. Kahle, Columbus.
102 Cerebrospinal Meningitis with Special Reference to Selected Cases. M. A. Brown, Cincinnati.

Oklahoma State Medical Association Journal, Muskogee

May, VI, No. 12, pp. 495-538

103 Unusual Cases and Incidents of Professional Career. W. Nairn, Nowata.
104 Cirrhosis of Liver. R. E. Pryor, Bartlesville.
105 Simplified Baldy-Webster Operation. W. E. Dicken, Oklahoma City.
106 Determination of Renal Efficiency. H. Reed, Oklahoma City.
107 Training of Expectant Mothers and Care of Infants. L. H. Huffman, Hobart.

Ophthalmic Record, Chicago

May, XXIII, No. 5, pp. 217-270

108 Glaucoma as Contributing Etiologic Factor in Insanity. Case Report. C. B. Welton, Peoria.
109 Retinochoroiditis Juxtapapillaris. L. F. Appleman, Philadelphia.
110 Diagnosis of Heterophoria from Portrait. S. Mitchell, Hornell, N. Y.
111 Pseudo-Optic Neuritis. F. P. Calhoun, Atlanta, Ga.
112 Parinaud's Conjunctivitis. N. W. Price, Niagara Falls, N. Y.
113 Light. H. E. Goetz, Knoxville, Tenn.
114 Castor Oil as Menstruum for Cocain. S. Mitchell, Jr., Hornell, N. Y.
115 Soap and Water and Opticians. C. H. May, New York.
116 Albinism of Eyes without Involvement of Hair or Skin. W. E. Gamble, Chicago.
117 Keratome, which Facilitates the Elliot Trephining Operation. G. B. Jobson, Franklin, Pa.

118 New Method of Preparing Eye for Microscopic Sections. H. R. Wright, Columbus, O.
119 Glioma of Retina in Child Eight Months Old. Case Report. B. Gleeson, Danville.

Ophthalmology, Seattle, Wash.

April, X, No. 3, pp. 375-590

120 Basis of Light Treatment for Diseases of Eye. F. Schanz, Dresden, Germany.
121 Observations on Ophthalmology in Orient. F. B. Tiffany, Kansas City, Mo.
122 Two Unusual Cases of Pulsating Exophthalmos. W. O. Maher, Sydney, Australia.
123 Orbital Cellulitis with Total Loss of Vision. F. B. Tiffany, Kansas City, Mo.
124 Bilateral Coloboma of Lens. F. P. Calhoun, Atlanta, Ga.
125 Edema of Macular Area of Retina. Report of Case. C. C. Stuart, Cleveland.
126 Temporary Injurious, Accidental Action of Secacornin of Eye. J. Fejér, Budapest.
127 Use of Jackson's Cross Cylinders in Estimating Refraction. J. W. Kimberlin, Kansas City, Mo.
128 Intracapsular Cataract Operation in Immature Cataract. W. A. Fisher, Chicago.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

May 9, I, No. 2784, pp. 1001-1052

1 *Cause and Cure of Cancer Viewed in Light of Recent Radiobiologic Research. W. S. Lazarus-Barlow.
2 Radium in Treatment of Malignant Disease. Report of Eight Cases. J. R. Riddell.
3 *Intramedullary Tumor of Spinal Cord: Treatment by Laminectomy and Application of Radium. J. M. Clarke and R. G. P. Lansdown.
4 *Respective Advantages and Disadvantages of Roentgen Rays and Radium in Treatment of Cancer. F. Hernaman-Johnson.
5 Painful Shoulders and Their Treatment by Physical Measures. J. J. Grace.
6 Treatment of Neuritis by High Frequency Current: Report of Nine Cases. W. F. Somerville.
7 Interlobar Empyema. G. Marshall.
8 Veronal Poisoning: Recovery after 100 Grains. H. R. Souper.

1. **Cause and Cure of Cancer.**—From the laboratory point of view, Lazarus-Barlow tries to show how radiobiologic research indicates radium and other radiations as a very special agency wherewith to treat cancer; how certain disadvantages are unavoidable and others avoidable with our present knowledge; how, and in what directions, research should be conducted to turn present failure into future success. The ideal he holds is that in radium and other radiations we hold the solution of the cure of cancer. In a sufficient dose radium and other radiations are capable of killing every type of cell met with in cancer.

The action of radiations on cells, he claims, is selective, or conversely; all varieties of cells are not equally vulnerable to radiations. There is some evidence that an active immunity is produced as the result of acting on malignant cells with radium. Lazarus-Barlow insists that microscopic examination by a competent morbid histologist should be made of every case subjected to radium treatment. The amount of radium in use should be verified periodically by a competent physicist. It should be recognized that the metabolic processes of every patient after exposure to a considerable dose of radium are profoundly modified, at least for a time. Treatment with radium should not follow immediately on operation. If radium treatment of a malignant new growth be decided on, such treatment should not be preceded by complete removal of the main part of the growth.

Finally, Lazarus-Barlow states that, whatever treatment may be the case in the future, for the present radium treatment of malignant disease should be confined to those cases for which modern surgery cannot offer a fair prospect by operation. But this is the furthest that one can go. At present, where modern surgical operation can offer a fair prospect of satisfactory result, the knife must be recommended in preference to every other agent, and this is as true for recurrences as for the primary disease.

3. **Intramedullary Tumor of Spinal Cord.**—The case reported by Clarke and Lansdown was one of intramedullary tumor of the lumbosacral region of the cord, found irremovable at operation, some weeks later treated by placing a tube containing 50 mg. radium for twenty-two hours in the spinal canal, with the result of steady and progressive improvement in movement and sensation in the previously paralyzed lower limbs, until the onset of an acute cystitis with *B. coli* infection wore out the patient's strength and caused death.

4. **Roentgen Rays and Radium in Treatment of Cancer.**—In early cases, whether for preoperative or postoperative irradiation, the Roentgen ray is preferred by Hernaman-Johnson to the radium tube. When surgical removal is impossible, he says, a tube of radium should be buried in the center of the tumor, but Roentgen rays should be used, in addition to the surrounding area, and to any organs where a metastasis is likely to occur. This combined treatment may result in some actual necrosis in the immediate neighborhood of the radium, but so long as this is confined to the interior of the neoplasm, no harm will result. Finally, radium therapy is Hernaman-Johnson's method of choice in cancer of the vagina, uterus and rectum; but even here he states Roentgen rays form a useful adjunct, so far as adjacent parts are concerned.

Dublin Journal of Medical Science

May, III, No. 509, pp. 321-400

9 Case of Phenol Poisoning. W. G. Smith.
10 Typhus. Its Etiology and Treatment. D. K. Milne.
11 Notification of Tuberculosis in Ireland: Its Failure. J. Moore.
12 Disordered Bladder Function in Nervous Disease. W. Boxwell.

Edinburgh Medical Journal

May, XII, No. 5, pp. 385-480

13 Diffuse Sclerodermia. B. Bramwell.
14 Biometric Analysis of Some Insemination Labor and Menstrual Labor Curves in Certain Mammalia. D. B. Hart.
15 Subconjunctival Cataract Extraction. A. MacGillivray.
16 Case of Acute Suppurative Otitis Media, Purulent Labyrinthitis and Leptomeningitis without Rupture of Tympanic Membrane. J. S. Fraser.
17 Anglo-Indian Surgeons. F. H. Garrison.

Glasgow Medical Journal

May, LXXXI, No. 5, pp. 321-399

18 Radium: Question of Supply for Glasgow. Collected Opinion from Workers at Home and Abroad. J. MacIntyre.
19 Myeloid Tumors of Tendon Sheaths. Report of Case. T. P. Grant and M. J. Stewart.
20 Occurrence of Wassermann Reaction in Serum of Children of Poorer Classes. W. M. Elliott.

Journal of State Medicine, London

May, XXII, No. 5, pp. 257-320

21 *Pathogenicity and Virulence of Bacteria. F. H. Thiele and D. Embleton.
22 Sexual Disease and Individual. A. Corbett-Smith.

21. **Pathogenicity and Virulence of Bacteria.**—The authors consider that the toxicity of an organism hitherto supposed to possess an endotoxin or exotoxin really depends on the liberation of toxic proteoclastic degradation bodies from it by the ferments of the host. The pathogenicity of an organism depends on the relationship between the ferment activity and the amount of bacterial protoplasm, whereby toxic degradation bodies accumulate in sufficient quantities to cause symptoms. The virulence of an organism depends on the power that the organism has of exuding around itself a zone of its own protoplasm, in which the toxic degradation bodies liberated by the ferments can be maintained in position; to act, on the one hand, as an aggressive shield against the phagocyte, and a protection against the further action of the ferment on the other hand. The infectivity of an organism depends on (*a*) its virulence, and (*b*) the relative activity of the ferments of the host.

Journal of Tropical Medicine and Hygiene, London

May 1, XVII, No. 9, pp. 129-144

23 *Murmekiasmosis Amphilaphes. A. J. Chalmers and J. B. Christopherson.

23. **Murmekiasmosis Amphilaphes.**—The authors have observed a peculiar form of cutaneous wart characterized by an extraordinary facility for growth, causing it to spread and to occupy practically the whole of the right side of the face

and neck, involving the external auditory meatus, destroying the right eye and even invading the mucous membranes of the mouth, gums, tongue and throat. Microscopically, the points of interest about this curious warty mass are the presence of numerous cryptococci and the fact that the cutaneous warts are largely composed of an adenoma derived from sebaceous glands which feature is absent in those on the tongue. The disease is readily curable by operation. The most important clinical feature of the disease is the wart, and therefore the authors propose to name this apparently new human disease "*Murmekiasmosis Amphilaphes.*"

The leading diagnostic features are: (*a*) The presence of a warty growth, the individual members of which are painless, firm, do not readily bleed and do not readily ulcerate, but which tend to slowly spread and to endanger or destroy important organs. (*b*) The proliferation of the germinal layer of the sebaceous glands in the cutaneous warts (the authors can well imagine a condition in which the proliferation would produce a carcinomatous and not an adenomatous appearance), with the absence of this feature in the lingual warts. (*c*) The non-involvement of lymph-nodes, the non-formation of metastases and the non-malignancy of the growth. (*d*) The non-recurrence after removal. (*e*) The fact that the warts grow on healthy skin and not on cicatrices, and do not grow at first in any special relationship to mucous openings or moist areas of skin. The only effectual treatment is removal by means of a series of large dissecting operations, when the whole growth comes away like mats of warts, leaving large areas to be covered in by skin flaps and by skin grafting. Damaged organs, such as the eye, must be removed.

Lancet, London

May 9, I, No. 4732, pp. 1299-1372

24 Some Modern Theories Concerning Hysteria. J. A. Ormerod.
25 Massive Collapse of Lungs Following Abdominal Operations. T. R. Elliott and L. A. Dingley.
26 Tumors of Urinary Bladder. R. H. J. Swan.
27 *Death from Hyperacute Streptococcal Infection (Strepticemia). G. Jefferson.
28 Congenital Icterus. S. Sheill.
29 *Rôle of Crucial Ligaments in Hemarthros and Injuries to Knee. E. M. Corner.
30 Case of Carcinoma of Breast in Male. H. V. Welch.
31 *Aspiratory Function of Heart. H. W. Verdon.

27. Hyperacute Streptococcal Infection.—The radical removal of tuberculous glands in the neck, while in Jefferson's opinion the only rational procedure, is not unfraught with danger. This is especially the case in the presence of a sinus. Two cases operated on by Jefferson died from a fulminating streptococcal infection, one twelve hours, and the other twenty hours after operation. The exact source of infection was not discovered, but Jefferson believes was probably from the walls of the sinuses present. He emphasizes that prophylactic treatment should be carried out for a few days before operation. The sinuses should be well swabbed out with iodin or similar antiseptic. The wound should be well washed out with saline before it is closed and drainage employed, preferably through a separate stab wound in the skin flap. In children at least probably no treatment will avail when once the bacteriemia is established.

29. Crucial Ligaments in Hemarthrus and Injuries to Knee.—Complete rupture of the internal lateral ligament of the knee, Corner says, is impossible without a complete rupture of the crucial ligaments. Partial rupture of the internal lateral ligament is produced by the crucial ligaments withstanding the strain of the accident and preventing complete rupture. The results of treatment will be *satisfactory. Complete or* severe lacerations of the internal lateral ligament will always be accompanied by a lesion of the crucial ligaments, even to the complete rupture of the anterior crucial ligament. The results of treatment vary *pari passu* with the extent of the laceration of the crucial ligaments. The convalescence may be long and the final result unsatisfactory.

31. Aspiratory Function of Heart.—The heart, Verdon says, is a pump and, like the mechanical pump, possesses aspiratory and propulsive powers—aspiratory power to draw supplies from pulmonary and systemic veins, and propulsive power to discharge the contents of its ventricles into pulmonary and systemic arteries. The heart works in a minus-pressure environment which at the height of inspiration registers 30 to 50 mm. Hg and during expiration falls to half this measure. Since fluids flow in the direction of the least resistance a centripetal current of blood from pulmonary and systemic sources sets in toward the minus-pressure environment of the heart, filling the great tributary veins, the auricles, and the ventricles. Intrathoracic minus-pressure thus constitutes a potential aspiratory force which keeps the central venous system perpetually full of blood, and maintains this section of the circulation under favorable conditions for the action of the kinetic aspiratory function of the ventricles.

The kinetic aspiratory function is intermittent and exercises itself only during systole. When the cone of the heart contracts and expels the contents of the ventricles into pulmonary and systemic arteries it vacates a section of the pericardial sac, a space which is instantly filled by the head of the venous column entering and expanding the auricles—the advance movement being rendered imperative by the *vis a tergo* of atmospheric pressure exercised on the contents of pulmonary and systemic veins lying at the foot of the venous column. The aspiratory function may be lowered by asthenic states of the myocardium or by reduction of the minus-pressure of the environment. When aspiratory function is lowered certain phenomena occur. Congestion of the pulmonary stream and stasis in bronchiolar radicles display themselves in symptomatic expression by asthma and dyspnea. The barrel chest of emphysema is the result of attempts made by inspiratory musculature to neutralize the untoward effects of minus-pressure insufficiency.

Annales de Gynécologie et d'Obstétrique, Paris

April, XLI, No. 4, pp. 193-256

32 Signs of Normal Pregnancy. A. Pinard.
33 *Rupture of Superficial Layers of Body of Uterus in Case of Premature Separation of Normally Located Placenta. M. Fraipont
34 Kyphotic Pelvis and Cesarean Section. A. Herrgott.
35 The False Appendicitis of Pregnant Women. M. Vautrin.

33. Incomplete External Rupture of Body of Uterus.—Fraipont reports a fatal case of this rare complication. The placenta was normally located but had separated prematurely. Necropsy showed several superficial fissures in the peritoneal investment and in the subjacent muscular tissue; none was deep. The premature separation of the placenta favors these superficial fissures by the infiltration of blood into the uterine wall back of the placenta site. This renders the uterine tissues friable, and the possibility of fissuring on the outside should always be borne in mind when the placenta is prematurely cast off.

Annales de Médecine et Chirurgie Infantiles, Paris

May 1, XVIII, No. 9, pp. 285-320

36 Advantage of Orthopedic Appliances in Connection with Sunlight Treatment of Surgical Tuberculosis. P. Redard.
37 Strapping Children with Pott's Disease to a Board; Lannelongue's Method A. Broca and A. Trèves.

Archives Générales de Chirurgie, Paris

April, VIII, No. 4, pp. 385-512

38 *Snapping Hip Joint. (La hanche a ressort.) G. Coudray. Commenced in No. 3.
39 *Present Status of Operative Treatment of Pulmonary Tuberculosis. N Lapeyre.
40 *Resection of the Knee for Osteosarcoma; Joint Implants. (Greffes semi-articulaires et résections typiques ou atypiques du genou pour osteo-sarcomas.) P. Mauclaire.

38. Snapping Hip-Joint.—Coudray calls the true snapping hip-joint that in which there is transient and intermittent subluxation of the head of the femur outside of the acetabulum. The false snapping hip-joint is that in which the cracking noise is not produced in the joint proper but on the greater trochanter. This latter type is the most common. He shows the mechanism of each by illustrations and states that it is liable to induce some disturbance and call for operative intervention. Various technics have been applied for the purpose and the outcome has been excellent. The anomaly may be congenital or acquired but the results of operative treatment seem to have been about equally good in each form, as he reviews the published experiences.

39. **Present Status of Operative Treatment of Pulmonary Tuberculosis.**—Lapeyre takes rather a discouraging view of "collapsotherapy," as artificial pneumothorax can be induced only in about 1 or 3 per cent. of all cases of pulmonary tuberculosis, and has cured the patient only in about 8 per cent. of the cases on record in which it has been applied. Plastic operations on the walls of the chest are too much of a strain on the patients weakened by their tuberculosis; the mortality has been high, and is far from counterbalanced by the results obtained. Resection of the diseased part of the lung, especially the apex, he regards as logical treatment, simple and not so much of a strain. Tuffier extols it and has reported one patient cured for seven years, Stretton one for six, and MacEwen one cured for eighteen years. This operation has been discarded, but Lapeyre thinks that recent progress in technic justifies taking it up again. Extrapleural pneumolysis, detaching the lung and filling in the space with fibroma tissue, omentum, Beck's paste or paraffin, has been applied by Tuffier in sixteen cases since 1910, and ten of the patients seem to be materially benefited, as also in Jessen's six cases.

40. **Resection of the Knee.**—Mauclaire states that the outcome has been very disappointing in his conservative operations on the knee for sarcoma in the bone, with the single exception of myeloplax osteosarcoma. This type of tumor does not seem to be malignant, and partial resection and scraping out the growth are safe as a rule. But with all other forms of sarcoma, round or spindle-celled, radical treatment should be urged. If refused or if the growth is of the myeloplax type, a modeling resection will generally give good results by the technic he describes, with illustrations, and compares with the literature on the subject. In one case reported he resected the epiphysis of the tibia and implanted the shaft of the tibia in the femur, giving a very good functional result.

Archives Mens. d'Obstétrique et de Gynécologie, Paris

April, III, No. 4, pp. 353-432

41 Bradycardia after Childbirth. (Bradycardie des suites de couches.) Fabre and Petzetakis.
42 *Importance for the Prognosis of the Blood Dust in Jaundice Following Childbirth. (Valeur pronostique de la recherche des hémoconies dans les ictères de la puerpéralité.) C. Jeannin and A. Levant.
43 Legislation on Rest after Childbirth. (La loi sur le repos des femmes en couches.) A. Levant.

42. **Blood-Dust in Diagnosis of Liver Disease.**—Jeannin and Levant recall that the hemokoniae in the blood, the small refractive bodies seen in a drop of fresh blood, increase in large numbers after ingestion of butter when the liver is sound. It is thus a simple matter to examine the blood for these bodies, and if they are found in scanty numbers this may be regarded as a sign that the liver is functioning defectively. They report two cases in which they applied this alimentary lipemia test to women with severe jaundice after a childbirth. There were scarcely any hemokoniae to be discovered in the blood in the first case and the grave prognosis from this was confirmed by death the seventh day after delivery. There were no hemorrhages nor nervous phenomena, but the jaundice was extremely severe and the liver was found much degenerated, with streptococci in some of the lobules. The symptoms were not severe enough at first to suggest a fatal outcome but the absence of blood-dust in the fresh blood compelled the gravest prognosis. In the second case the jaundice was mild and there were no threatening nervous or hemorrhagic disturbances. The woman had been in labor for three days with breech presentation, temperature 38 C., pulse 120. Here too only 15 or 20 hemokoniae were found in the drop of blood, and she died the sixtieth hour after extraction of the dead fetus.

In three other cases the women presented jaundice in the course of pregnancy; one had very severe catarrhal jaundice with clay-colored stools and seemed to be in a bad way, but the hemokoniae were found in normal numbers. The woman recovered and the pregnancy proceeded normally to term. In two other cases there was subjaundice; the women did not vomit much, the diacetic odor of the breath was not at all pronounced, but the small number of hemokoniae in the blood gave the warning that the women were on the way to pernicious jaundice, and prompt interruption of the pregnancy seemed their only salvation. The test is made by examining the blood fasting and then again after the woman has eaten 50 gm. of butter on bread. Three and a half hours later the hemokoniae show up in large numbers under normal conditions, every slide in the microscope looking like a "milky way" and alive with movements of the refractive particles from the alimentary lipemia.

Archives des Mal. de l'App. Digestif, Paris

April, VIII, No. 4, pp. 181-240

44 *Diagnosis of Gastric Cancer by Cells Found in Rinsing-Water. (Le cytodiagnostic de l'estomac.) Loeper and E. Binet.
45 Uncontrollable Vomiting of Pregnancy, Sometimes Amenable to Impressive Psychotherapy. (Toxémie ou névrose?) J. Beloux.

44. **Diagnosis of Gastric Cancer by Cells Found in Rinsing-Water.**—The technic which Loeper and Binet have found so useful has already been described in these columns (May 16, p. 1587). They here review their experiences with it to date which confirm the importance of the findings with the test when applied to the fasting stomach and so cautiously that the lining of the stomach suffers no injury. It has demonstrated that purely functional stomach derangement is extremely rare, while unsuspected gastritis is astonishingly frequent, especially the superficial and transient forms with more or less congestion, desquamation and diapedesis. The cytodiagnosis reveals that a tendency to ulcer is at the bottom of many cases of supposed simple dyspepsia, and it warns when the ulcer is becoming malignant, revealing the onset of the cancer long before it can be detected in any other way. The article is accompanied by twenty-one illustrations of the types of microscopic findings found with various stomach affections, mild and malignant.

Bulletin de l'Académie de Médecine, Paris

April 21, LXXVIII, No. 16, pp. 589-608

46 *The Wassermann Reaction in the Tuberculous. M. Letulle and Others.
47 Tracheobronchial Injections in Treatment of Asthma. H. Bourgeois
48 Local Eosinophilia with Cancer of Uterus. A. Siredey.
49 Area of Dulness Simulating Ascites and Splashing Sound as Aids to Diagnosis of Intestinal Occlusion. (Valeur séméiologique de la fausse ascite et du clapotage abdominal pour le diagnostic de l'occlusion intestinale.) A. Mathieu.

46. **Wassermann Reaction in the Tuberculous.**—Letulle states that 19 per cent. of 346 tuberculous inmates of the Boucicaut Hospital gave a positive response to the Wassermann test. Only 10 of the total 64 reacting were aware of their syphilitic taint or had signs of it. Fourteen of the patients, including 8 under 36, had some aorta affection.

Journal de Chirurgie, Paris

April, XII, No. 4, pp. 425-560

50 *High Amputation of the Uterine Cervix plus Colpectomy in Treatment of Genital Prolapse. (Operation de Bouilly dans le traitement des Prolapsus génitaux.) C. Lenormant and D. P. Dutaillis.
51 *Tardy Ulnar Paralysis after Fracture of External Condyle of the Humerus. A Mouchet.

50. **Amputation of Cervix for Prolapse.**—Ten illustrations show the various steps of this method of treating genital prolapse by supravaginal amputation of the cervix plus colpectomy involving mostly the anterior vaginal wall, and posterior colpoperineorrhaphy. This removes the hypertrophied cervix and entails more or less atrophy of the rest of the uterus while it reduces the size of the lumen and the length of the vagina and supplies a solid support for the uterus and bladder.

51. **Tardy Ulnar Paralysis.**—Mouchet reports with illustrations four cases in which after fracture of the external condyle of the humerus, ulnar paralysis developed later after an interval of several years up to thirty. The fracture generally occurred in childhood. The result in time is a valgus deformity and this in turn stretches and induces inflammation of the ulnar nerve, and the neuritis gradually entails paralysis. Operative correction of the valgus deformity relieves the strain on the nerve and puts an end to the paralysis. A wedge-shaped resection of the humerus above the condyle, the broad end of the wedge toward the body, corrects the valgus deformity.

Journal de Médecine de Bordeaux

May 3, LXXXV, No. 18, pp. 293-306

52 Testing the Resisting Power of the White Blood Corpuscles. (Recherches sur la fragilité leucocytaire.) H. Secousse.

Journal d'Urologie, Paris

April, V, No. 4, pp. 393-544

53 *Fine Ultimate Outcome of Plastic Operations on the Urethra. (Résultats éloignés de l'urétroplastie par la tunnellisation et la greffe dermo-épidermique dans les formes graves de l'hypospadias et de l'épispadias.) G. Nové-Josserand.
54 Prostate and Prostatectomy. A. Castano.
55 Suburethral Passages. (Les canaux anormaux sous-urétraux.) F. Lévy and V. Planson.
56 Electrolytic Abortive Treatment of Gonorrhea. G. Li Virghi.
57 *Reflux of Urine by the Ureter after Nephrectomy. M. Lévy-Weissmann.
58 Test Polyuria. (Contribution clinique à l'étude de la polyurie expérimentale.) E. Pirondini.

53. **Ultimate Outcome of Plastic Operations on the Urethra.**—Josserand has traced to date twenty-one patients on whom he had operated for hypospadias or epispadias several years ago. Only three were adults. The new urethra formed from the skin-epidermis flap in a tunnel hollowed out for it has stood the test of time, six, seven and twelve years having elapsed since in several of the cases. Two of the patients have had gonorrhea. He first closes the natural orifice and diverts the urine through an opening in the perineum into the urethra. The formation of the new urethra is the next step; internal urethrotomy later ensures a normal-sized lumen and then the perineal fistula is closed up. By operating thus in stages there is only exceptionally a tendency to a fistula. In three cases the artificial urethra grew wider as the boys grew generally. In one case there was a transient stricture which yielded to a few attempts at dilatation. A permanent stricture developed further in three cases in which the field of operation became infected; the infection was traced to a thread left in the new urethra to facilitate catheterization or to a retention catheter introduced into the bladder through the perineal opening. These procedures opened the door to infection which entailed slight stenosis requiring occasional dilatation to keep it under control.

57. **Reflux of Urine through Ureter after Nephrectomy.**—Weissmann says that he has been able to find only fifteen cases on record of this reflux of part or all of urine from the sound kidney. He reports a case from his own service, the urine from the bladder pouring out of the ureter stump where it had been brought out through the lumbar incision left from the nephrectomy. The flow continued uninfluenced by changes of position until finally the incision healed and the urine was voided by the natural route. The wound opened again a week later during hard coughing and part of the urine poured through it anew. The cause of the reflux is probably the irritable condition of the bladder in consequence of the tuberculous process for which the kidney was removed. The bladder contractions are so vigorous that the sphincter closes with them, and the urine is forced up into the empty ureter. The walls of the ureter, besides, have had their elasticity impaired and are unable to oppose the physiologic resistance to the reflux. It may keep up for several days or weeks, six months (Rafin), seven months or a year (Desnos). In Hartmann's case a secondary ureterectomy became necessary, but in all the others a spontaneous cure was finally realized.

Lyon Médical

April 26, XLVI, No. 17, pp. 913-968

59 *Ramifying Bone Growth in the Lungs. (Cas d'arborisation osseuse du poumon.) L. Mangini.

59. **Ossifying Sclerosis of the Lungs.**—Mangini has found records in the literature of twenty-three cases of an ossifying process ramifying in the lungs, and after searching for three years in his own necropsy work he encountered a typical example. The cadaver was that of a man of 62, and the bone needles could be felt in the lungs reaching down to the pleura, as many as ten or fifteen in each lower lobe, and cohering to form an actual arborization. The microscopic findings explain it as the ossification of fibrous nodules, the cicatrix of repeated inflammatory processes. Some of the branches of bone were 3 or 4 cm. long, and enclosed in a fibrous sheath. There was nothing to suggest tuberculosis, but for twenty-seven years the man had suffered from "colds" and cough each winter, and during the last six months the sputum had been blood-stained. There was no valvular disease but signs of incipient tabes.

Presse Médicale, Paris

April 29, XXII, No. 34, pp. 321-328

60 Early History of Percussion. E. Rist.

May 2, No. 35, pp. 329-340

61 The Campaign against Uterine Cancer. E. Forgue.
62 *Curability of Uterine Cancer. J. L. Faure.
63 Symptoms from Steeple-Skull Deformity. (Le syndrome oxycéphalique ou syndrome de cranio-synostose pathologique.) M. Bertolotti.

62. **Uterine Cancer.**—Faure remarks that the results of operative treatment of uterine cancer have far surpassed the most sanguine anticipations of even a few years ago. Most of his patients operated on from eight to sixteen years ago are in good health to-day and we can count on at least 40 per cent. of permanent cures; in his private practice fully 70 per cent. are apparently permanently cured. As long as the uterus is movable he urges surgical intervention regardless of the extent of the lesion.

Revue Pratique d'Obstétrique et de Gynécologie, Paris

April, XXII, No. 4, pp. 97-124

64 *Suture of Levator Ani Interferes with Delivery Later. (La perinéorrhaphie avec suture étendue du releveur de l'anus cause de dystocie.) L. Pouliot.
65 Atresia and Stenosis of External Os of Uterine Cervix. W. Friedmann.
66 Radiotherapy of Uterine Fibroma. R. Gauducheau.
67 Pregnancy Cholecystitis. M. Audebert.

64. **Suture of Levator Ani as Cause of Dystocia.**—Pouliot's case is another warning against plastic operations for laceration of the perineum. The woman was at term with her second child, two years after an operation with myorrhaphy done six months after obstetric laceration of the perineum. The child's head was held back by a cord-like commissure of the vagina. Part of the perineum subjected to this strain developed gangrene but this was soon under control and recovery followed. Plastic operations on the perineum, with suture of muscles in this region, should never be done so as to interfere with child-bearing later.

Archiv für klinische Chirurgie, Berlin

CIV, No. 2, pp. 301-579. Last indexed May 2, p. 1439

68 Necrosis of the Cartilage as Factor in Deforming Arthritis. (Rolle der Knorpelnekrose in der Pathogenese der Arthritis deformans.) G. Axhausen.
69 *Importance of the Thymus in the Origin and Course of Exophthalmic Goiter. C. Hart.
70 *Intestinal Cystoid Pneumatosis. F. Demmer.
71 Pedunculated Cystic Lymphangioma on Diaphragmatic Peritoneum. I. Kumaris.
72 Cystic Degeneration of Mammary Gland. (Cystische Entartung der Brustdrüse.) T. Todyo.
73 *Traumatic Subdural Hemorrhages with Long Interval. A. L. Vischer.
74 Hemorrhage in the Kidney. (Renale Hämaturien.) H. Datyner.
75 *Tuberculous Fistulas Cured by Exposure to Direct Sunlight; Heliotherapy. (Einwirkung der Sonnenstrahlen auf tuberkulose Fisteln.) E. Kisch and H. Grätz.
76 *Is Tuberculosis of the Lymph-Nodes in the Pancreas Region of Air-Borne Origin? H. Gross.

69. **The Thymus in Exophthalmic Goiter.**—Hart says that his report of a case in 1908 was the first to call attention to the thymus as a factor in exophthalmic goiter. In his case a man of 29 with a typical case of this disease died suddenly and the thyroid was found apparently normal in every respect. The thymus, on the other hand, was abnormally large and scraps implanted in guinea-pigs proved extremely toxic; the controls bore without harm implants of thymus of other origin. Hart thinks it is now established beyond question that exophthalmic goiter can develop from an exclusively thyroid origin, from an exclusively thymus origin, and from a mixture of both. The predominance of the thymus factor seems particularly deleterious, and the more so, the greater the tendency to constitutional hypoplasia. The earlier the disease develops the greater the preponderance of the constitutional element. The defective development of the chromaffine system, especially the medulla of the adrenals, is one of the chief signs of the constitutional hypoplasia, particularly from the functional standpoint.

Many cases of Addison's disease, he adds, develop on the basis of defective development of the adrenals—a manifestation of constitutional hypoplasia. He found extreme hypoplasia of the chromaffine system in a number of persons who had died during or soon after operative treatment of exophthalmic goiter. In one such case exophthalmic goiter and Addison's disease had both developed on the basis of physical inferiority. Neither disease was secondary to the other. In another case there was slight bronzing and merely hints of exophthalmic goiter, but the defective functioning of the chromaffine system had entailed death without the typical symptoms having had a chance to develop. In other cases the chromaffine system was in actual hyperplasia, showing the excessive functional demands on it; we must not forget that a hyperplastic organ is liable to be functioning abnormally as well as a hypoplastic one. In operative treatment of exophthalmic goiter, the thymus should be attacked first, he says. After its partial or total removal, follow with resection of the thyroid.

70. **Intestinal Cystoid Pneumatosis.**—Demmer gives an illustrated description of what he thinks is the fifteenth case on record of this affection in man. His patient was a farmer of 42, and, as in nearly all the other cases, the cystoid pneumatosis followed old chronic gastro-intestinal trouble of some sort, generally gastric ulcer. In nine cases an operation was done for dilatation of the stomach and pyloric disease was found in five. In two cases a tuberculous process was found in the intestines. The total cases compiled are tabulated for comparison . The stretch of intestine involved in the cystoid affection was successfully resected in four cases, and was excluded from the rest of the bowel tract in two cases. In the personal case reported, it was found necessary to apply gastro-enterostomy on account of an ulcer at the pylorus; the appendix and a long stretch of the ileum were resected. That cystoid pneumatosis may retrogress spontaneously is demonstrated by Urban's case in which all the symptoms gradually and completely subsided after an exploratory laparotomy. Operative intervention is not necessary as long as there is no trouble from adhesions or obstruction of the gut. The symptoms in the case reported had been those of a recurring stomach trouble for six years. Then constipation of the severest type developed, the bowel moving only under strong laxatives or high enemas. The stool was like goat droppings at times, and black. He had been unable to go to work for nine months and been confined to bed for three, when the operation put him on his feet again, a clinically well man. There was a history of a contusion ten years before in the stomach region, but no venereal disease.

73. **Traumatic Subdural Hemorrhage with Long Interval.**—Vischer's two cases warn that after an accident liable to entail subdural hemorrhage the patient should be kept under supervision longer than is usually considered necessary. Signs of pressure on the brain did not develop until one or two months after the trauma, accompanied in one case by a brief attack of aphasia which permitted exact localization of the hematoma. An abscess was improbable on account of the normal temperature. No information was obtained from roentgenoscopy. Fresh and old blood and clots were found in the hematomas. The aphasia patient was entirely cured by the operation and the other patient's symptoms have subsided except a tendency to muscular paresis in one leg. This is probably the result of some slight subcortical injury of the brain at the time of the trauma and has nothing to do with the subdural hematoma. The headaches of which persons complain after an accident to the skull may be due to relics of submeningeal hemorrhage which at the time are not causing trouble otherwise. Trephining relieves not only *in these tardy hematoma cases* but also *in actual hemorrhagic pachymeningitis.* De Quervain operated successfully for this cause, relieving the brain from pressure by the blood, first on one side and later on the other, in a case of internal hemorrhagic pachymeningitis in a hard drinker.

75. **Direct Sunlight in Treatment of Tuberculous Fistulas.**—This long article is by an assistant at Rollier's sanatoriums in Switzerland and an assistant at Bier's surgical clinic at Berlin. Sixteen severe cases are reported in detail as typical specimens of what can be accomplished by months of sunlight treatment in old fistulous processes. Rollier reported last year a complete cure in 248 out of 331 cases of open tuberculosis. In the 16 cases reported the 4 in which the soft parts alone were involved have healed entirely, as also 8 of the bone cases but in 4 there is still a minute active process in the depths so that the fistula still persists although materially reduced in size. Fistulas in soft parts heal in four or seven months, but when a bone or joint process is the cause of the fistula a year is usually necessary, sometimes less, but oftener still longer. Kisch and Grätz say that even under a brief course of heliotherapy the fistulas show a marked reaction, including those that have previously resisted all conservative and surgical measures. The sunlight does not cause encapsulation of the fungous masses, but a breaking down of the disease tissue and its substitution by cicatricial tissue.

76. **Tuberculous Lymph-Nodes in Pancreas Region.**—Gross states that in the last two years he has encountered five cases of tuberculosis restricted exclusively to the lymph-nodes in the pancreas region. In the first case the tuberculous lymph-nodes, lying back of the common bile-duct, had compressed it and the gall-bladder. This woman of 65 for thirty-seven years had been subject to gall-stone colics, and the gall-bladder was finally removed. About ten months later symptoms developed anew, ascribed to a stone in the bile-duct. The duct was found empty, but compressed by the large swollen lymph-nodes, the seat of nodular tuberculosis with giant cells. Similar findings were also encountered at the necropsy of a young woman who had died from cholangitis after suffering two years from a stone in the common bile-duct. No tuberculous foci could be discovered except a single plum-sized, cheesy lymph-node back of the common bile duct. The third case was in a workingman who had had stomach trouble for years finally compelling operative treatment for the supposed gastric ulcer. The stomach was found adherent in the pylorus region and this was explained by a large tuberculous lymph-node close to the edge of the pancreas, surrounded by edema which spread toward and involved the pylorus. The big tuberculous node was excised and gastro-enterostomy done and the patient cured at one stroke. Exacerbations of the tuberculous process explain the course in these cases and throw light retrospectively on many puzzling cases of trouble in the upper abdomen. In another case colics in the upper abdomen and lately pain radiating to the back were the only symptoms presented by the young woman. An operation failed to reveal the expected gall-stones but showed tuberculous nodules on the mesocolon and extensive adhesions which were broken up. The patient has been in good clinical health since. The lymph-nodes involved in the five cases were all on the right side of the pancreatic lymph-node system, some in the upper and some in the lower part.

Berliner klinische Wochenschrift

May 4, LI, No. 18, pp. 821-868

77 *The Filling and Emptying of the Heart during Repose and Exertion. (Füllung und Entleerung des Herzens bei Ruhe und Arbeit.) G. F. Nicolai and N. Zuntz.
78 Protective Ferments in the Serum That Digest Witte Peptone. (Zur Kenntnis der proteolytischen Enzyme im Serum Gesunder und Kranker.) P. Saxl.
79 Intranasal Operations on the Lacrymal Passages. (Intranasale Chirurgie bei Erkrankungen der Tranenwege.) M. Goerke.
80 *Idiopathic Intercostal Neuralgia. E. Tobias.
81 Recovery under Salvarsan from Supposed Progressive Paralysis Fifteen Months after Infection with Syphilis. W. Wechselmann.
82 Technic for Introducing Instruments into the Stomach. (Magen-instrumentenschieber.) M. Einhorn (New York).
83 *Colored Plates to Show Proteolytic Action of Ferments and Antiferments. L. Brieger and Schwalm.

77. Size of the Heart at Rest and at Work.—Nicolai and Zuntz report experiments at the Athletics Research Institute at Charlottenburg which demonstrate, they state, that the heart increases in size during vigorous exercise and afterward is smaller than it was before the exercise was commenced. They examined persons working on a kind of treadmill, the chest fitted with a fluorescent screen so that the changes in the heart outline could be supervised. It seems almost certain that the heart normally contains always some reserve blood, to be called on in special emergencies. This explains why the diameter is larger when the heart is working quietly than when it has been pumped entirely empty in the course of vigorous muscular exercise.

80. Idiopathic Intercostal Neuralgia.—Tobias says that analysis of the cases of supposed idiopathic intercostal neuralgia almost always reveals some unsuspected cause which excludes them from the idiopathic category. He found only five cases that stood the test among the 1,400 patients at the Berlin policlinic for nervous affections since 1900. Of these five, herpes zoster on the left side was evident in three; another was a pronounced neurasthenic with left intercostal neuralgia. The fifth patient was a man of 39 with a history of gonorrhea; for eight weeks he had been suffering from unbearable left intercostal neuralgia which had come on suddenly. The knee-jerk and Achilles reflex were lost on both sides and the Wassermann test elicited a positive reaction. Thus the policlinic did not have a single case of actual idiopathic intercostal neuralgia during that period, and in Tobias' private practice he encountered only six cases which could not be traced to herpes zoster or cured by treatment for rheumatism. In three cases the discovery of an aneurism explained the "neuralgia" and in two others chronic inflammation in the vertebrae proved to be the cause of the bilateral intercostal neuralgia.

83. Improved Technic for Estimation of Ferment Action.—The proteolytic power of a fluid is instructively shown by the depressions eaten into a Löffler plate, and Brieger called attention long ago to the dimpling (*Dellenbildung*) in the Löffler plate as a simple and reliable test for antitrypsin in the blood-serum. It is here announced that the test is materially simplified by staining the mixture used for the plate. The depressions not only show up very much clearer but the proteolytic fluid decolors the mixture. A safranin stain, known as iris-violet, has been found most useful. Five drops of a 16 per cent. solution of the stain are added to the mixture which is made up of 80 c.c. fresh beef serum and 20 c.c. of a 2 per cent. solution of grape-sugar bouillon. A loop of the serum to be tested is mixed in turn with 1, 2, 3, 4 or more loops of the standard solution of trypsin. One drop from each of the mixtures is then deposited on the plate. If no dimples are hollowed out and there is no discoloration except with the 1 : 4 mixture, then the antitryptic power of the serum under examination is recorded as 4. This figure represents the normal standard.

Correspondenz-Blatt für Schweizer Aerzte, Basel

April 25, XLIV, No. 17, pp. 513-544

84 *Recent Progress in Diagnosis and Treatment of Pulmonary Tuberculosis. M. Landolt.

84. Recent Experiences with Pulmonary Tuberculosis.—Landolt reviews what has been accomplished in recent years at the Aarau Sanatorium, saying that tuberculin has rendered good service as an aid in differentiation, especially the reaction in the focus in the lung after subcutaneous injection. *He insists that this focal reaction must be scrupulously* avoided when tuberculin is being given for therapeutic purposes. The diazo reaction is unfavorable, especially if it keeps up. It is frequently positive with intestinal tuberculosis, and it is often negative in threatening pulmonary tuberculosis. In this latter case Weiss' urochromogen reaction may prove positive. He found the diazo positive in 43 and the chromogen in 204 of 395 patients tested, the latter test proving far more delicate. He often obtained a positive response with the latter and later, as the disease progressed, the diazo became positive. In the cases with a favorable course, the diazo dropped off first and later the chromogen reaction.

He found inunctions of a 10 per cent. guaiacol-petrolatum effectual in reducing the temperature; a small lump was rubbed into the skin twice a day. Artificial pneumothorax has been systematically induced in suitable cases but the precaution is always taken to inject oxygen at the first sitting, instead of the nitrogen which is used exclusively later. A brief syncope was observed in one case as the patient started to get up after injection of 400 c.c. of nitrogen; the pulse stopped entirely but tranquil breathing kept up; in two minutes she had recovered; she was subject to syncopes. This was the only occurrence of the kind in the 520 punctures for the purpose in the forty-eight patients given this treatment. They formed 33 per cent. of the 139 patients in the third stage of the disease, and many of them were materially benefited. Transient benefit was realized even in some acute cases, but the progress of the disease could not be permanently arrested. There was no air embolism in any case but mediastinal emphysema was observed in some and a pleural effusion was observed in 30 per cent. This is a very unwelcome complication as it may cause discomfort and production of adhesions later.

On the whole the immediate results of the pneumothorax were excellent in 65 per cent. of the cases, so that this method of treatment, he says, may be regarded as great progress. He does not approve of it in the milder cases; they may recover without it, and the procedure is more or less annoying and cannot be regarded as entirely harmless. But it is a welcome aid, and to sanatorium physicians in particular.

Deutsches Archiv für klinische Medizin, Leipzig

CXIV, Nos. 3-4, pp. 209-432. Last indexed May 2, p. 1441

85 Sugar Content of the Blood in Carbohydrate Treatment and Negative Value of Determining the Sugar in the Blood in the Treatment of Diabetes. J. Menke.
86 Clinical and Experimental Study of Hemophilia. R. von den Velden.
87 The Epinephrin Content of the Blood. L. Adler.
88 Nervous Affections in Leukemia. H. Stursberg.
89 Coagulation of the Blood after Injection of Albumin Bodies. (Blutgerinnung nach parenteraler Zufuhr von Eiweisskorpern.) R. von den Velden.
90 Nervous Origin of Peptic Ulcers. K. Westphal.
91 Phenolsulphonephthalein Test for Kidney Function. K. Hessel.

Deutsche medizinische Wochenschrift, Berlin

April 30, XL, No. 18, pp. 889-936

92 *Threatening Hemorrhage in Pregnant Women. (Behandlung bedrohlicher Blutungen in der Schwangerschaft.) P. Jung.
93 Interstitial Keratitis a Phenomenon of Local Anaphylaxis. (Problem der Genese der interstitiellen Keratitis.) F. Schieck.
94 *Lipoid-Free Diet and Its Connection with Beriberi and Scorbutus.* W. Stepp.
95 *Radiotherapy of Lupus. (Zur Lichtbehandlung des Lupus.) A. Jesionek.
96 *The Friedmann Remedy. (Zur Kenntnis des Friedmannschen Mittels.) F. F. Friedmann and L. Rabinowitsch.
97 *Reaction of the Heart to Epinephrin. (Reaktion des menschlichen Herzens auf Adrenalin.) O. Roth.
98 *Alimentary Galactosuria and Levulosuria. H. Wörner and E. Reiss.
99 Alcoholism in Women. Roper.
100 Strictures of the Urethra in Syphilitics Require Vigorous General and Mild Local Treatment. (Schwere Harnröhrenverengerungen bei Syphilis.) B. Goldberg.
101 Therapeutic Influence of Mineral Springs. (Haben die Heilquellen einen spezifischen Einfluss auf den kranken Menschen?) Lenné.

92. **Threatening Hemorrhage during Pregnancy.**—Jung remarks that tamponing is seldom necessary for hemorrhage from an abortion; but if the atony is such as to require it, the uterus must be packed to the fundus. The first thing, he emphasizes, when called to a case of hemorrhage from abortion is to take the woman's temperature, even before making any examination. Fever may be already installed when the physician first arrives, and if this is not ascertained at the time, he may be held responsible for the fever as the case progresses. He advises against the curet, whether the cervix is open or not, for fear of perforation, but as long as any relics of the abortion are left in the uterus and they are *keeping up hemorrhage, they must* be scraped out with the finger even if the case is already septic. It is a question whether to dilate the cervix with laminaria or a metal dilator; if there is already fever he prefers the latter.

The hyperemia of pregnancy is liable to start coexistent tumors to bleeding, and varices in the genitals or on the limbs may cause fatal hemorrhage. Tumors may be excised without interfering with the pregnancy if the uterus is spared as much as possible and the region is not tamponed afterward. If a varix in the labium or clitoris region bursts, manual compression is all that is possible, applying pressure with a cotton pad dipped in a weak disinfectant solution. The bleeding vessel is so friable that it does little good to ligate it, as a rule, and the only way to arrest the hemorrhage is to throw a stout ligature around the whole bundle of veins, applying a compressing T-bandage. With varices in the vagina the effort should be made to throw a ligature around the veins, avoiding the use of a tampon, to refrain from bringing on labor.

94. **Lipoids Indispensable in Food.**—Stepp found that his mice invariably died when fed on food from which the substances soluble in alcohol and ether had been removed. Restoring the alcohol-ether extract to the food rendered the food wholesome again for the mice. Addition of fat did not answer the purpose. His experiments point anew to the lipoids as representing the vitamins.

95. **Simplified Radiotherapy of Lupus.**—Jesionek presents arguments to show that the benefit from Finsen treatment of lupus is due to the inflammation-inducing properties of the rays and not to any direct bactericidal action from them. It is not necessary, he adds, to use such complicated technic to induce inflammation; the sun alone is able to inflame the skin. All the effect is not felt at the moment, but in twelve hours the skin shows signs of pronounced inflammation after prolonged exposure to the sun or, on cloudy days, to the mercury quartz lamp. At the dermatologic clinic at Giessen, this method of treatment has been systematically applied and with most excellent results. The therapeutic effect may be explained by assuming that the serum attracted into the patches of lupus by the inflammation brings a complement which enables the *amboceptors present* in the tuberculous foci to display their antibody action.

96. **The Friedmann Remedy.**—Friedmann reiterates that the turtle bacillus culture has always proved in his experience totally harmless for the guinea-pig. The infiltrations and nodules which occasionally develop at the point of injection are of a harmless and transient nature. They represent an intermediate stage and regularly retrogress, and further inoculation of guinea-pigs from them has never induced in any instance tuberculosis, that is, a progressive affection.

Rabinowitsch replies in detail to Friedmann's statements recapitulating what she said in a previous communication in regard to his remedy for tuberculosis (summarized in the Berlin Letter, page 1343), and adding further evidence to reenforce her protest against preventive inoculation of children. She states that the abscesses at the point of *injection* are not such harmless matters as Friedmann claims; she knows of a large number of Friedmann's patients who have had to suffer for months from these abscesses, in addition to the case she previously mentioned. She describes another in detail in which the woman lost 18 pounds in three months. She also calls attention to the necessity for discriminating between the "culture" and the "finished remedy." What Ehrlich said of the culture was *only from the bacteriologic* point of view and applied only to the harmlessness of the culture for animals. She says that it is certainly strange that Friedmann in his "long years of research" has never succeeded in inducing tuberculosis in guinea-pigs with his bacilli while others have obtained positive results in a few months. This testifies either that the culture is not a standard unit culture—as Friedmann claims—or else that the avirulent bacilli have acquired virulence in the course of time.

97. **Reaction of the Heart to Epinephrin.**—Roth states that in fifteen patients with heart disease and an equal number free from cardiac taint, injection of epinephrin caused a modification in the heart action to the extent of extra systoles when the heart was already pathologic, but not with the sound hearts. He discusses the nervous factors evidently at work.

98. **Galactosuria and Levulosuria in Tests of Liver Functioning.**—Wörner and Reiss declare that when 40 *gm.* of galactose are given for the test, an elimination of 3 *gm.* and more must be regarded as positively pathologic. Levulose given for this purpose must be in the dose of 100 gm., and more than 0.7 gm. must be eliminated before we can speak of a pathologic output. Alimentary levulosuria testifies in a general way to some injury of the liver. Pathologic alimentary galactosuria on the other hand, testifies to the existence of certain definite liver affections and thus permits differential diagnosis of catarrhal jaundice, phosphorus poisoning and fatty liver. Circumscribed liver affections, gall-stones and cancer do *not lower the tolerance for galactose unless* infection is installed.

Deutsche Zeitschrift für Chirurgie, Leipsic

April, CXXVIII, Nos. 1-2, pp. 1-208

102 *Correction of Tendency of Viscera to Sag. Splanchnoptosis. O. Wiedhopf.
103 Autoplastic Correction of Fractures of Humerus Just above the Condyle. G. v. Saar.
104 *End-Results of Fracture of the Leg. (Heilungsresultate von Unterschenkelbrüche.) O. M. Chiari.
105 Diagnosis of Acquired Diverticulum in Lower Bowel. (Erworbener Dickdarmdivertikel und Sigmoiditis diverticularis.) F. de Quervain.
106 *Acute Pancreatitis. Rollmann.
107 Influence of Roentgen Rays on Healing of Bone Wounds. K. Salvetti.
108 Tearing Off of Lesser Trochanter. (2 Fälle von Abrissbruch des Trochanter minor.) O. Walbaum.
109 Complications of Coxa Valga. B. Brand.
110 Prothesis after Resection of Lower Jaw. Behrend and Bauchwitz.
111 Permanent Cures of Mammary Cancer. H. Lindenberg.
112 *Transplantation of Entire Knee-Joint. C. Deutschländer.

102. **Splanchnoptosis.**—Wiedhopf presents evidence to prove that the viscera sag because there is disproportion between the size of the abdominal cavity and the size of its contents. Treatment can aim to reduce the size of the cavity or to increase the bulk of the contents or both. The latter can be accomplished by eating more, while the size of the cavity can be reduced by toning up the abdominal muscles or wearing a bandage or by an operation on the abdominal wall or floor of the pelvis. He emphasizes that any "pexy" operation, fastening any organ to support it, is illogical in the extreme as it does not act on the cause. He has worked out a technic to correct splanchnoptosis which he thinks has everything to commend it as it reduces the size of the anterior abdominal wall and materially strengthens it without opening into the peritoneum. The rear aponeuroses of the rectus muscles are brought forward and the folds in each are sutured together.

104. **Outcome of Fracture of the Leg.**—Chiari has found that the ultimate functional outcome of a broken leg is better in those who were compelled to go to work early than in those who were paid a sickness indemnity and thus were able to spare their leg longer. The most favorable results were encountered on the whole in those whose stay in the hospital (Innsbruck) was relatively brief. This does not apply naturally to fracture of the malleolus, which must be

considered apart; his eleven bilateral cases of this class warn that plaster casts should be discarded in favor of extension or Lexer's bandage.

106. **Acute Pancreatitis**—In the twelve cases described by Rollmann the patients were nearly all corpulent and passing or past middle age. Gall-stone trouble was a factor in two, gross error in diet and abuse of alcohol in one. In one case the head was swollen and a *few foci of necrosis were all that was found at the gall-stone operation.* In two other cases the pancreas disease caused death from toxins in less time than usual with peritonitis from perforation. When there is much suppuration the course is generally milder. Several of the patients said they had had similar attacks on previous occasions, and the calcified foci of necrosis found in the mesentery in some cadavers testify that acute pancreatitis may sometimes heal spontaneously. Five of his twelve patients died; one developed diabetes five years afterward, and one still seems unable to digest fat properly.

112. **Implanted Knee.**—Deutschländer implanted an entire knee-joint after resection of the knee of a boy of 12 for deformity left from poliomyelitis. The results were not all that had been *anticipated, but were far from a total failure.* Most of the implant was in time destroyed and only a small fraction actually healed in place. The parts that were thus retained were all cartilage. By restricting the implant to cartilage alone we are thus more certain of final success, and the operation becomes much simpler, making less demands on the organism. It is in fact merely a form of the interposition technic.

Jahrbuch für Kinderheilkunde, Berlin

May, LXXIX, No. 5, pp. 507-644

113 Intestinal Infections in Infancy. (Zur enteralen Infektion im Säuglingsalter.) H. Schelble.
114 Inherited Syphilis Producing Symptoms of Friedreich's Ataxia; Two Cases. A. Spiecker.
115 Treatment of Rickets. IV. (Vergleichende Untersuchungen uber die Wirkung von Lebertran und Phosphorlebertran beim künstlich ernährten rachitischen Kinde.) L. Frank and E. Schloss.
116 Suppuration in Parotid Gland in Children Originating in Middle Ear Disease; Four Cases. E. Handrick.
117 Sugar Metabolism in Lymphatism in Children. H. Schirokauer.
118 Experimental Study of the Effect of Thymus Extracts. R. Fischl. Commenced in No. 4.

Medizinische Klinik, Berlin

May 3, X, No. 18, pp. 753-794

119 Treatment of Disturbances in Hearing and Subjective Noises. (Neue Mittel gegen Hörstörungen und Ohrgerausche.) A. Passow.
120 *Scoliosis. A. Schanz.
121 *Alimentary Galactoşuria in Diagnosis. (Zur Galaktoseintoleranz.) E. Maliwa.
122 Action of Thermal Baths on the Cardiovascular System. (Einwirkung von Thermalbadekuren auf Erkrankungen der Kreislauforgane.) E. Pfeiffer.
123 The Seashore for Tuberculous Children. (Behandlung der kindlichen Tuberkulose an der See.) Treplin.
124 Action of Brine Baths on the Cardiovascular System. (Einfluss der Bad-Kosener Sole auf den Circulationsapparat des Menschen.) C. Schütze.
125 *The Duodenal Tube. (Zur klinischen Verwendbarkeit der Duodenalsonde.) M. Gang and P. Klein.
126 *Differentiation of Diseases by Serodiagnosis. (Klinische Ergebnisse mit dem Abderhaldenschen Dialysierverfahren.) B. Forster.

120. **Scoliosis.**—Schanz declares that there is scarcely a case of curvature of the spine for which medical advice is not sought early in the case. The mother usually notices the deformity at once and hurries the child to the doctor. And the child's fate is decided chiefly by what the doctor says at this time. If the child is told to "stand up straight," the diagnosis and supervision of the course of the case are rendered practically impossible thereafter. Never tell a child under these conditions to stand up straight. The next thing, Schanz continues, is to determine whether the curvature is benign or malignant, and the course of the case is the only means to ascertain this. The malignant form develops considerable deformity in a few weeks or months; the onset before or after school life is also suspicious; likewise a history of trauma. The malignant form also grows worse at intervals, with periods of remission, but the course is progressive on the whole. He has had about one malignant case to ten benign ones; the latter do not require treatment as a rule. The mother can massage the back, the child can wear a brace or sleep in a plaster bed—this is generally ample. Too much gymnasium work is liable to transform a mild into the malignant type, and aggravate a malignant case. It is not necessary to take the child out of school; *resting the elbows on the school desk helps to relieve the spine. The scoliosis seldom grows much worse* during school life, but severe deformity may develop rapidly after leaving school.

121 **Alimentary Galactosuria.**—Maliwa tabulates the findings in twelve cases of liver disease, in ten of orthostatic albuminuria, and twenty-one other patients, after ingestion of 40 gm galactose, fasting. The data demonstrate that intolerance for galactose is by no means an unequivocal symptom of insufficiency of the liver. The kidneys often have something to do with it. When the latter is the case, the galactose elimination begins abruptly and in large amounts, dropping off equally abruptly. With insufficiency of the liver, the curve of elimination is generally more protracted.

125 **The Duodenal Tube.**—Gang and Klein expatiate on the important information to be derived from the use of the duodenal tube in various stomach and duodenum affections and in making tests of the digestive ferments, etc. They tabulate the details in twenty-one cases of intestinal derangements and in ten gastric ulcer or chlorosis cases.

126 **Serodiagnosis in Differentiation.**—Forster applied Abderhalden's ninhydrin technic to detect cases of incipient exophthalmic *goiter and states that treatment instituted on* the basis of the ninhydrin reaction gave constantly corroborative results. Among the cases related is that of a very effeminate man of 43 who for some time had complained of disturbances resembling those of women at the menopause. His serum digested ovary tissue but not testicle, thymus or thyroid tissue. The man is evidently a pseudohermaphrodite and this case suggests that the ninhydrin test may be found especially useful in puzzling cases of hermaphroditism, eunuchoidism, etc.

Münchener medizinische Wochenschrift

April 28, LXI, No. 17, pp. 913-968

127 Bronzing with Cirrhosis of Liver and Pancreas but no Glycosuria. (Hamochromatose unter dem Bilde des Morbus Addisonii.) J. Nakano.
128 Danger from Diphtheria Bacilli Carriers. (Sind die Diphtheriebazillentrager fur ihre Umgebung infektiös?) G. Riebold.
129 Transverse Tracheotomy. (Erfahrungen mit dem queren Luftröhrenschnitte.) O. Franck.
130 Polyuria with Mammary Cancer Suggests Metastasis in the Hypophysis; Two Cases H. Hohlweg.
131 Spontaneous Cerebral Hemorrhage Eighth Day of Acute Hemorrhagic Diathesis in Previously Healthy Young Woman. A. Hufschmidt.
132 Electric Testing Instruments. (Elektrische Reizinstrumente für chirurgische Operationen.) M. Brandes and P. Buschmann.
133 Advantages of Graduated Syringes instead of Pipets in Serologic Work. Alter.
134 Munich Chair for Communal Preventive Medicine. (Sozialhygienische Unterricht an der Universität München.) J. Kaup.
135 Present Status of Pleurisy. H. Königer.
136 The Protective Ferments. (Enthält das Serum von Kaninchen denen ihr eigenes Blutserum resp. solches der eigenen Art intravenos zugeführt wird, proteolytische Fermente, die vor der Einspritzung nicht vorhanden waren?) E. Abderhalden and G. Ewald. (Nachweis von spez. Fermenten mit Hilfe des Dialysierverfahrens) S. Lichtenstein and Hage. (Klinische Verwertbarkeit des Abderhaldenschen Dialysierverfahrens.) F. Freymuth.

Therapie der Gegenwart, Berlin

May, LV, No. 5, pp. 193-240

137 The Ovary and Internal Secretion. W. Benthin.
138 Value of Strophanthus in Sleeplessness from Heart Disease. (Schlaflosigkeit bei Herzinsuffizienz.) A. Fraenkel.
139 Dosage for Children. (Dosierung von Arzneimitteln im Kindesalter.) *Engel.*
140 Diagnosis and Curability of Multiple Abscess in the Liver. (Multiple Leberabscesse.) O. Heinemann. Commenced in No. 4.
141 *Full Utilization of Vacations for Young and Old. (Ferienausnützung für Kinder und Erwachsene.) M. Bockhorn.

141. **How to Make the Most of Vacations.**—Bockhorn urges physicians to realize better the opportunities afforded by the vacations of the families in their charge, to enable the "resorters" to utilize to the full this welcome change. The physician may deem it best for the children to be separated from the parents for a time, or for one child to be separated from the rest. Children who are nervous, those who stutter, and both children and adults who have bad breathing habits, can be trained in better habits during the vacation.

Children are usually such imitators that even a brief course of training may do wonders. Bockhorn practices in a seaside resort and for the last four years has given summer courses out on the dunes in correct speaking and breathing and the use of the voice in general. It is remarkable, he observes, that so many persons who have to use their vocal organs a great deal never give a thought to perfecting the technic of its use. By his courses he has enabled some to resume their teaching or other career which they had had to give up on account of their voice failing, or asthma or other disturbance.

Wiener klinische Wochenschrift, Vienna

April 30, XXVII, No. 18, pp. 545-596

142 Further Study of Wassermann Reaction. C. Sternberg.
143 Auscultation of the Heart Sounds Through the Nose and Mouth. (Methode die Herzschallphanomene vermittels der Luftwege deutlich zu vernehmen.) K. Mayer.
144 Anatomy of Tonsil Region and Technic for Tonsillectomy. F. Hutter.
145 *Complications after Gastro-Enterostomy. J. Decker.
146 Dubious Sex. (Sexus anceps.) R. Hofstätter.
147 *The Chemistry of the Stomach with Cholelithiasis and Its Importance in Treatment. L. v. Aldor.

145. **Complications of Gastro-Enterostomy.**—In Decker's case fistulas had developed uniting stomach and jejunum, jejunum and transverse colon, and between the colon and stomach. The stools were clay colored. He broke up the adhesions and sutured the perforations, restoring the patient to health.

147. **Stomach Complications with Gall-Stones.**—Aldor recalls that nearly eight years ago he published his experiences in about a hundred cases of cholelithiasis without jaundice in over half of which he had found signs of a catarrhal affection in the small or large intestine or both. His examination of hundreds of similar cases since has confirmed the frequency of chronic intestinal catarrh with cholelithiasis, suggesting some causal connection between them. He here reports almost similar findings in respect to the stomach. Normal conditions of gastric secretion were found in only 18 per cent. of the 82 patients; hyperacidity in 39 per cent.; subnormal or no acidity in 42.6 per cent. The latter condition seems to be the result of the severe affection of the gall-bladder abolishing its function. The loss of gall-bladder functioning possibly modifies the composition of the bile as well as its mode of outflow. Bile in the gall-bladder is nearly ten times more concentrated than bile which drips directly from the liver into the intestine.

For these and other reasons enumerated, it seems evident that the gall-bladder is more than a mere reservoir for the bile, and the loss of it often entails severe and irreparable disturbance in gastric secretion. In a certain proportion of other gall-stone cases, chronic gastritis is responsible for the disturbance in gastric secretion. In this class of cases the symptoms on the part of the stomach keep up more or less most of the time, while in the other group they subside more or less during the intervals between the attacks of gall-stone trouble.

It is very important in treatment to discriminate between the cases with catarrhal affections and those without, as the measures appropriate in one may be directly injurious in the other. When the subacidity results from loss of gall-bladder functioning, hydrochloric acid is indicated, 25 or 30 drops in water half an hour after meals. This does not supply the natural amounts of hydrochloric acid, but it is enough to give the stimulus for pancreas secretion. When it is a question of chronic gastritis, with large amounts of mucus, rinsing out the fasting stomach has often had a surprisingly favorable action. Discovery of impairment of the gastric secretion with nothing else to indicate chronic gastritis, testifies to severe changes in the biliary apparatus, especially in the gall-bladder, and thus betokens a graver prognosis from this point of view than the gastritis cases.

Zentralblatt für Chirurgie, Leipsic

May 2, XLI, No. 18, pp. 753-800

148 *Destroying the Nerve Causing Secretion in Salivary Gland Cures Rebellious Fistula. (Behandlung der permanenten Parotisfisteln durch die Entnervung der Speicheldrüse.) R. Leriche.
149 *Operative Treatment of Spastic Flat-Foot. A. Fischer and A. Baron.

148. **Treatment of Fistulas into Parotid Gland.**—Leriche cured an absolutely intractable fistula left from a stab-wound by exposing the auriculotemporal nerve, loosening it up back to the condyle process and then slowly twisting up its central end, pulling on it and tearing out a stretch about 4 cm. long. The secretion ceased completely in a few days and the fistula soon healed. He has applied this operation in three cases to date. (See Abstract 85 in The Journal, April 11, 1914, page 1203.)

149. **Operative Treatment of Spastic Flat-Foot**—Fischer and Baron give an illustrated description of an amplification of Tubby's operation. A strip of tendon 6 or 8 cm. long is cut from the peroneus longus and a shorter piece from the peroneus brevis. The longer piece is then used as a brace to hold the foot in good position. One end is slit and one of the halves is worked through a tunnel bored across the side of the scaphoid. The two halves are then sutured together, forming a kind of handle to the scaphoid. The strip is then brought upward under the skin and fastened to another tunnel bored across the side of the tibia just above the malleolus. The scaphoid bone and hence the whole foot can then be held in normal position by tightening the connecting brace.

Zentralblatt für Gynäkologie, Leipsic

May 2, XXXVIII, No. 18, pp. 649-680

150 Treatment of Puerperal Inversion of the Uterus. W. Beckmann.
151 Anatomy of Uterine Cervix. (Portio vaginalis.) E. Kraus.
152 Roentgenoscopy of Uterine Tumors by Intra-Uterine Injection of Collargol. I. C. Rubin (New York).

Gazzetta degli Ospedali e delle Cliniche, Milan

April 19, XXXV, No. 47, pp. 489-504

153 Retrograde Incarceration of Hernia. L. Bozzotti.

Riforma Medica, Naples

April 18, XXX, No. 16, pp. 421-448

154 Typhoid Bacilli Can Often Be Cultivated from the Mouth Early in Typhoid. (Sulla presenza dei bacilli di Eberth nella bocca dei tifosi.) E. Mondolfo.
155 Experimental Study of Cellular Secretion in Tumors. M. Piscitelli.
156 Smaller *Doses of Bromids during Abstention from Salt* in Treatment of Epilepsy. (Epilessia e trattamento bromicoipoclorurato.) G. Pellacani.

Rivista Ospedaliera, Rome

April 15, IV, No. 7, pp. 317-356

157 Some Practical Aspects of the Question of Prophylaxis of Typhoid. A. Caccini.

Mitteilungen a. d. med. Fakultät der k. Univ. Tokyo

XII, pp. 1-686 and Supplement

158 Physical Anthropology: Measurements of 3,425 Coreans. T. Kubo.

Hospitalstidende, Copenhagen

May 6, LVII, No. 18, pp. 545-576

159 Volvulus of Sigmoid Flexure and Its Treatment. A. Klindt. Commenced in No. 17.

Ugeskrift for Læger, Copenhagen

April 30, LXXVI, No. 18, pp. 779-838

160 *The Skin* Tuberculin Test in the Campaign against *Tuberculosis.* (V. Pirquets Prøve og praktisk Tuberkuloseforebyggelse.) K. Isager.

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RECOMMENDATION AS TO SANITATION CONCERNING EMPLOYEES OF THE MINES ON THE RAND MADE TO THE TRANSVAAL CHAMBER OF MINES

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At the invitation of the Chamber of Mines, I arrived in Johannesburg Dec. 3, 1913, to make investigations into the cause of the high death-rate from pneumonia among the native laborers working in the mines of the Rand. As a result of this investigation I was asked to recommend such measures as may appear necessary for the reduction of the death-rates and the improvement of the general sanitary condition of the mines and compounds.

For this purpose I was assisted by Major Robert E. Noble, Medical Corps, United States Army, general inspector, Department of Sanitation, Isthmian Canal Commission, and Dr. Samuel T. Darling, chief of the Board of Health Laboratory, Department of Sanitation, Isthmian Canal Commission.

In investigating this matter I find that the mortality among employees has been very large.

The reports of the Native Affairs Department show that for natives employed in mines and industrial works in the proclaimed government district of the Transvaal during the year 1903, the death-rate was 71.7 per thousand. This high death-rate has been steadily dropping till the present time. During the year 1912, for about 300,000 employees in the same area, the rate was 26.84. This rate is still very much too high, as we are considering men in the prime of life.

The death-rate among the negro employees working on the Panama Canal during the same year was only 10. Still this drop from 71 per thousand to 26 per thousand in the course of nine years is most encouraging.

On analyzing the reports for 1912 of the Native Affairs Department, Appendix 2, page 79, we find that the total death-rate was 22.6 for diseases. The four highest diseases were pneumonia, phthisis, meningitis and enteric fever, giving us rates of 9.8, 5.4, 1.3, 1.1. These four diseases are all more or less infectious and contractable. If they could be entirely eliminated, the rate for 1912 would be reduced to 5.0 for all other diseases. While entire eradication of these diseases cannot at present be accomplished in this or any other community, probably, by proper hygienic measures, a very appreciable reduction could be accomplished.

PNEUMONIA

First, let us consider pneumonia. It varies very greatly in the different mines. It also varies greatly as to the locality from which the natives come. Among natives from the British Nyassaland Protectorate it is highest. Among the natives from the Cape Province it is lowest

Taking the report of the Native Affairs Department from 1909 to 1913, we find that February had the lowest rate with an average of 9.56, and May the highest with 12.64. Taking three consecutive months, we find that January, February and March have the lowest rates with an average of 10.02. We find that October, November and December have the highest rate with an average of 12.28. Ordinarily, pneumonia causes its greatest mortality in the cold winter months. This does not seem to be the case here as far as the mortality-tables bear evidence; but these tables are obscured, as far as this particular point is concerned, from the fact that the tropical native was not brought to the Rand during the winter months. It is no doubt the case here, as it is everywhere else, that the incidence of pneumonia is greater during the winter than during the summer months.

Dr. Maynard has worked out tables which show this to be the case.

The pneumonia rate varies widely also in different localities. Among natives not working in mines in the city of Johannesburg, the rate was 1.20 per thousand for the year 1912. In the new Goch mine, the rate among natives was 16.71. In the Municipal Location at Klipspruit, the rate among 750 natives over 18 years of age, extending over a period of three years, was 1.37. This is the same class, and also age, as the men in the mines.

Pneumonia is a disease in man due to infection by a particular organism—the pneumococcus. Individuals and races differ widely in the degree in which this organism affects them. Some races, like the white, resist infection strongly. Others, like the negro, have less resistance. Those races with less resistance acquire a much higher degree of resistance after long exposure to the infection. The negro when brought into a community in which pneumonia prevails acquires nearly as high a degree of resistance as the white man. If we take 100 white men and examine them, we shall find that twenty or thirty have virulent pneumococci in their throats. When one of these individuals becomes much depressed from any cause, such as exposure to cold, starvation, severe sickness or any constitutional strain, he is liable to develop pneumonia. If we bring the unacclimatized negro into contact with such persons or other infected negroes, he gets the pneumococcus in his throat and secretions in the same way. The white man, by long exposure to this pneumococcus, having constant slight colds, sore throats, etc., has acquired more or less immunity to the organism. The negro, when he first comes in contact with the pneumococcus, has none of this immunity. Expose the two men to the same depressing agency, give them both a bad cold, for instance, and the white man, through his immunity, resists the pneumococcus, while the negro does not. The organism obtains an entrance in the latter case, and the man succumbs to pneumonia.

If we take a community composed of persons who have had little exposure to the pneumococcus, we shall find a high mortality-rate from pneumonia. If the community is made up of persons who have had prolonged exposure to the pneumococcus, we shall find a low mortality-rate from pneumonia.

We find for the year 1912, that the 21,000 tropicals had a death-rate from pneumonia of 26.30. But the 199,000 non-tropicals had a rate of 8. In general, the tropical is the non-civilized native who has had little contact with the white man's diseases, and the non-tropical, the native who has had more or less contact with civilization—and the white man's diseases.

In general, therefore, a community which has had a large proportion of tropical natives will have a high pneumonia death-rate, and a community with a large proportion of non-tropical natives will have a low pneumonia death-rate.

This is a general rule to which there are individual exceptions, as is always the case in infectious diseases.

It is everywhere asserted on the mines by those in a position to know, that the old "boy" has a very much lower rate of pneumonia than the new "boy." I have no doubt that this is true. All the facts that we can collect point in that direction. On the Isthmus the new "boy" had a four and a half times higher rate than the old "boy." Dr. Maynard, in his excellent report on this subject, finds that taking the pneumonia among natives on the mines, from the first to the eighteenth month at work, the rate is: 15.83 per thousand during the first six months, 9.01 during the second six months, and 5.31 during the third six months.

Furthermore, in confirmation of this, in one of the mines especially investigated with regard to this point, it was found that a marked preponderance of deaths from pneumonia occurred during the first few months of service in the mines. All the deaths from pneumonia during the year 1913 at this mine, according to the month of service in which they occurred are given in Table 1. The very extensive and useful statistical tables furnished us by the Witwatersland Natives' Labor Association show that during the year 1912, 2,031 deaths from pneumonia occurred among native laborers. Of these deaths, 1,199 occurred among men who had been on the mines less than six months. In 1913, 1,668 deaths occurred from the same cause. Of these deaths, 981 occurred among men who had been on the mines less than six months.

TABLE 1.—DEATHS ACCORDING TO MONTH OF SERVICE

No. of Deaths	Month of Service*
16	1st
18	2 d
11	3 d
9	4th
11	5th
9	6th
7	7th
8	8th
5	9th
4	10th
6	11th
5	12th

* Including previous service.

The uniformity with which pneumonia attacks preponderatingly the new boy, or recently arrived native, is as pronounced here on the Rand and in Rhodesia as it was on the Isthmus of Panama, and this seems to be the only generalization of epidemiologic value yet drawn with regard to the incidence of pneumonia.

This indicates that the question of immunity is the most important element in the causation of the death-rate. This being the case, what sanitary step can be taken to decrease the rate?

In the construction of the Panama Canal, in its incipiency, we had much the same trouble with pneumonia among the negroes that is experienced with the negroes in the mines in the Transvaal.

The bulk of our working force is composed of negroes brought from the West India Islands, mostly from Jamaica and the Barbados. In August, 1913, our total force was 58,500, of whom 46,000 were negroes and 12,500 white men. In 1906, our force was an average of 21,000 negroes and 5,400 white men. Among these negroes we had 396 deaths from pneumonia, a rate of 18.74 per thousand per annum. In 1907, we had an average of 28,600 negroes and 10,700 white men. Among these negroes we had 304 deaths from pneumonia, a rate of 10.65. In July, 1906, with a negro force of 22,989, we had 84 deaths, which gives us an annual rate of 43.41.

The death-rate for pneumonia among the black employees of the Isthmian Canal Commission in 1906 was 18.74 per thousand, which is higher than the death-rate for this disease among native employees in the Proclaimed Labor District of the Transvaal for any year since 1909.

The rise in pneumonia, with us, commenced in October, 1905, and increased until July, 1906, when it reached its maximum, from which time it slowly decreased.

Our death-rate from pneumonia for the succeeding years among the negroes is given in Table 2.

TABLE 2.—DEATH-RATE AMONG NEGROES

Year	Death-Rate	Year	Death-Rate
1906	18.74	1910	1.66
1907	10.61	1911	2.24
1908	2.60	1912	1.30
1909	1.66	1913*	0.42

* First eight months.

We appointed a board to examine into this matter. This board gave a great deal of time and attention to the work and went into it very carefully. It found that no particular house or town had a continuously high rate. The rate would vary from time to time. This indicated that the variation was due to a varying factor of infection, and not to location or surroundings.

With regard to seasonal incidence, we found that the pneumonia in Panama increased from the beginning of the dry season of 1907, being the greatest toward its end, with 124 cases in April, the driest month. It diminished in number in May and June, which are wetter months, but rose again in July, which was as wet as June. It was decidedly worse in the dry season of 1907 than in the wet season of 1907; but this was opposed to its general course for 1906, for the greatest number of cases of pneumonia appeared during some of the wettest months.

Our men worked continuously in the rain, and came home soaked through at night. The majority of them were so poor that they did not have a change of clothing. They therefore slept in their wet clothes. The board tabulated those who had one suit of clothing, and those who had more than one suit. The results showed no relation. The men who slept in dry clothes had as much pneumonia as those who slept in wet.

Our barracks were arranged with tiers of bunks, and were so ventilated that the top bunk had much more draft than the others. The men were tabulated as to sleeping in top bunks, or lower bunks, with no result. The rate of pneumonia in the top bunk was no greater than in the lower.

Altitude had little effect. Though there was not much difference in our camps in this respect, some were at sea-level, others in the hills on the divide at between two and three hundred feet elevation. There was no constant difference between such camps. Some camps at sea-level had very high rates, others at the same altitude low rates. Some camps in the hills high rates, others low.

The only difference in susceptibility was shown to be governed by the length of time that the laborer had been on the Isthmus. This is shown in Table 3, which indicates that the same number of men over three months on the Isthmus who furnished two cases of pneumonia would give nine cases if they were men who had had less than three months' residence.

TABLE 3.—SUSCEPTIBILITY OF NEW MEN AND OLD MEN *

Month	No. New Men	No. Old Men	Colored Pay-Roll	Cases, New Men	Cases, Old Men	Ratio No. New Men to Old	Ratio of No. of Cases New Men to Old	Comparison of the Two Ratios
March ..	6,559	20,655	27,214	55	29	1:3.14	1:0.52	6.04
April ...	6,458	21,537	27,995	77	91	1:3.33	1:1.18	2.82
May	3,994	24,543	28,537	32	41	1:6.14	1:1.28	4.79
June ...	3,235	25,596	28,831	10	15	1:7.91	1:1.50	5.27

* By "old men" is meant those who have been over three months on the Isthmus, and by "new men" those who have not been over three months on the Isthmus.

Sum of cases among new men......174
Ratio, 1:1
Sum of cases among old men......176
Ratio of ratios, 4½:1
Number of new men...........20,246
Ratio nearly 2:9
Number of old men............92,331

The board found that the pneumonia was four and a half times as high among the men who had been on the Isthmus less than three months as it was among men who had been on the Isthmus more than three months. We argued from this that the question was one of immunity; that the negro who had been on the Isthmus three months became acclimatized, and acquired a certain sort of immunity. We probably get the organism slowly, and thereby acquire immunity, whereas the man who developed pneumonia had not been exposed long enough to acquire immunity when the exciting causes came along.

The arrivals on the Isthmus of steerage passengers from 1905 on are shown in Table 4.

The number of steerage passengers is a fair measure of the number of negroes coming out to the work.

We see that there is a relation between the number of newcomers and the incidence of pneumonia in 1906 and 1907. At that time all laborers were housed in barracks provided by the Isthmian Canal Commission. From 1908 to 1913 the incoming negroes were from the same areas as those who came in 1905, 1906 and 1907. During the whole period, laborers were returning to their homes and later returning to the Isthmus for work, just as is the case on the Rand. The only difference is that on the Isthmus there was for each year a decided increase of arrivals over departures, which shows that there was each year a considerable number of non-immunes arriving on the Isthmus, yet with a decrease in the incidence of the disease. The fall in death-rate from pneumonia was coincident with allowing laborers to leave the barracks provided by the commission and build for themselves cabins on the hills, or to live in the towns of the Canal Zone, and the bringing in of their families. Table 4 shows the incoming and outgoing steerage traffic with the net increase in population.

TABLE 4. QUARANTINE REPORT OF ARRIVALS AND DEPARTURES OF STEERAGE PASSENGERS FROM AND TO FOREIGN PORTS

Year	Arrivals	Departures	Increase
1905	24,202	12,904	11,298
1906	34,433	16,694	17,739
1907	36,438	17,900	18,538
1908	26,605	16,679	9,926
1909	22,851	13,445	9,406
1910	21,851	17,319	4,532
1911	21,520	17,272	4,248
1912	21,298	19,911	1,387
1913*	21,573	14,969	6,606
Totals	230,771	147,093	83,678

* Eight months only.

Among the 24,000 negroes coming to the Isthmus in 1905, there was a very small proportion of persons who had been to the Isthmus before, whereas among the 21,000 who came in 1912 there was a very large proportion. In 1908 our pneumonia dropped to 2.60 per thousand, and since that time it has continued to fall, though we have continued to bring in a considerable number of new employees.

During the first few years on the Isthmus, we housed our negroes in barracks containing about eighty-four men each, and of such dimensions as to give them about 30 feet of floor-space. This is ordinarily considered very crowded. In 1907 we allowed our negro laborers to scatter out along the line of the Canal, build each man his hut, with a small cultivable piece of land, and bring over his family In 1910 our negro force was 37,000. Of this force, only about 7,000 lived in barracks; the other 30,000 lived in their own establishments. To this fact of scattering I attribute the disappearance of epidemic pneumonia. I explain it in this way:

It is a well-recognized fact in military hygiene that overcrowding of a barrack is coincident with inflammation of the upper respiratory passages, which at times becomes epidemic. This was the case on the Isthmus of Panama, and doubtless is the case on the Rand. Non-immunes crowded into barracks would in the same manner develop inflammation of the upper respiratory passages, in many cases due to the pneumococcus, which inflammation would afford a portal of entry for the pneumococcus, resulting in some persons in lobar pneumonia, and in others in a certain amount of immunity. If we have eighty-five men in a crowded barrack, and the pneumococcus gets in, the probabilities of its spreading to the other men are considerable. If the pneumococcus establishes itself in a man living in a hut alone, or with his family, it is not apt to spread to the men with whom he works, and with whom the contact is not intimate. I am satisfied in my own mind that the scattering of our negroes was the chief cause of our sudden and permanent drop in pneumonia on the Isthmus.

Other causes no doubt contribute to it. The next most important, we think, is acquired immunity, such immunity as the old boy would have as compared with the new boy. It is self-evident that the proportion of old boys to the new was much larger in the force in 1909 than it was in 1906.

We are at present endeavoring to get 1,500 new tropicals with the idea of trying the matter by experiment. Our wish is to take some one mine, place the whole number at this mine, put 500 in huts, of the remaining 1,000 inoculate 500 against pneumonia, and place the whole 1,000 in barracks. Such an experiment would not be at all conclusive, however, if tried for only a short time. For instance, the barrack in which the inoculated lived might become infected, and the other barrack and the huts remain uninfected. In this case all the pneumonia might occur among the inoculated, not because of the inoculation, but because of the accident of their infection. The experiment, however, would be useful as far as it went. If continued for a long enough time, and in a considerable number of instances, fewer men ought to become infected in the huts than in the barracks.

I recommend that the question of immunization for pneumonia as recommended by Sir Almroth Wright be more carefully looked into. So far the evidence on the subject is more or less contradictory. As tried on the Rand the inoculated do not show any greater protection than the controls, but as used at the Premier Mine in 1913, the results seem very striking. In 1912, the 17,000 inoculated had a death-rate from pneumonia of 6.89 per thousand, and the 6,700 controls a death-rate of 17.72 per thousand. The inoculated and controls were selected at random, and I can see no reasonable explanation for the marked difference between the pneumonia death-rate of the inoculated and that of the controls, except that the inoculation gave a large degree of protection to the inoculated. It has been urged that a large proportion of the vaccinated might have come, purely accidentally, from regions in which the immunity of the native was high, and a large proportion of the controls from regions in which immunity was low. As a mathematical proposition this is true. There is one chance in a hundred that this might be so. But as a practical proposition it can be thrown out and not considered.

In 1910, the death-rate from pneumonia was 27.72 per thousand; in 1911, 30.99; in 1912, 9.83, and in 1913, 7.63.

They received their last tropicals in 1910. Since that time, as was to have been expected, the death-rate has dropped. In 1913 they vaccinated all their men, and their death-rate dropped to 7.63. It is rather against the Premier that their death-rate from pneumonia in 1913 (7.63) should be just about the same as the average death-rate from pneumonia on the Rand from natives south of latitude 22—8 per thousand.

Dr. Darling has suggested that the vaccine used at the Premier may be from organisms of a different strain from those used on the Rand. This has actually occurred in the use of vaccine for typhoid fever. A body of men protected by vaccination against typhoid fever has been found *not* to have been protected against paratyphoid.

It would be useful for the Chamber of Mines to continue the experimental inoculation against pneumonia, using the different strains of pneumococci. If we had such a vaccine, as the results at the Premier seem to show, then the question of the employment of the tropical natives would be at once solved. I recommend that in future when vaccinating natives, one-half be kept as controls. By this method you would soon arrive at positive results.

In considering preventive measures it must be borne in mind that the causative agent in pneumonia is the pneumococcus, an extremely delicate micro-organism; when exposed to external influences, such as sunlight and drying it is killed in a few minutes, but when resident in the respiratory passages of those infected it lives for weeks and months.

Persons recovering, or having recovered, from pneumonia may, and usually do, carry virulent pneumococci in their mouths and respiratory passages for long periods, and may infect others indirectly by means of their sputum, or by infecting the drinking- or eating-utensils used by several persons in common, or by infecting the common water-tap or cup. It has been observed that natives when drinking from the water-tap place it in their mouths, and in this way may leave a moist film of infected spittle on the tap to be taken up by the next person using the tap. In the mines, one tap has to serve for many laborers on the level, and personal observation has shown the facility with which a line of thirsty natives may become mutually infected.

Not only are pneumococci transferred in this way from persons who have recovered from pneumonia, but it is most probable that pneumococci are acquired similarly from persons suffering from the "common cold," tonsillitis and other forms of inflammatory disease affecting the upper air-passages.

It is highly desirable, therefore, that means should be used to prevent as far as possible such conveyance of infection as is indicated above. This might be done effectively and economically by means of some of the well-known types of "bubbling" fountain, or protected taps. These taps prevent the dissemination not only of pneumonia, but also of tuberculosis and syphilis.

TUBERCULOSIS

Next let us consider tuberculosis. This disease is far too high among native miners. The report for 1912 shows that the total rate for all native miners was 5.65 per thousand for pulmonary tuberculosis. The rate at Panama, for the same class during the same year, was less than 1 per thousand. The rate for London, total population, men, women and children, was 1.03 per thousand for 1911, and for New York, 1.67 per thousand for 1911.

In addition to the deaths of natives from pulmonary tuberculosis, there is a high percentage of deaths from other forms of tuberculosis among the native laborers, as tuberculosis of the intestines and abdominal viscera.

During the year 1912, 1,168 patients with tuberculosis in all its forms, were repatriated by the Witwatersland Natives' Labor Association. It is not a high estimate to say that half of these (584) died during this year. During the same year thirty-three patients with tuberculosis died in the W. N. L. A. compound.

Judging from findings of necropsies witnessed by Dr. Darling, I am of the opinion that a considerable number of cases of deaths reported as occurring from pneumonia, result really from tuberculosis. This, under the circumstances, is an unavoidable clinical error. The actual number of deaths from tuberculosis for the year 1912 among your 156,534 natives is probably 885 reported, 584 deported, 33 in compound, and 200 error in diagnosis, a total of 1,702.

This gives a death-rate for tuberculosis in all its forms of 10.87 per thousand per annum, of the average working force of 156,534 natives, so that the death-rate from tuberculosis in all its forms is as a matter of fact considerably higher than 5.65 per thousand for 1912, and 4.80 per thousand for 1913, as shown by the reports supplied me by the Chamber of Mines.

Estimating the deaths from tuberculosis in the same way as above, we find that in 1910 we had among natives 1,001 by report, 268 repatriated for last six months of year, 51 in compound, and 200 by error, a total of 1,520, which would give us a rate of 8.85 per thousand. In 1912, estimating as above, we have a rate of 10.87 per thousand. I am inclined to think that for the future, present conditions continuing, tuberculosis will cause you more trouble among natives than does pneumonia at present.

Overcrowding plays just as important a part in the spread of tuberculosis of types other than pulmonary tuberculosis, as it does in the pulmonary type. The same measures for its control are applicable.

Tuberculosis is caused in man by a well-known micro-organism, the *Bacillus tuberculosis.* This bacillus can be transferred from person to person in many ways. The most common way is by the sputum of the diseased person. This sputum is expectorated, dries, becomes pulverized, and the bacilli are blown about, and enter the lungs of the well person. Or, without drying, it can get on the hands of others, and thus be transferred to the mouth and enter the system. The greatest preventive measures are therefore concerned with the care of the sputum. White miners having tuberculosis should be eliminated; if elimination is not possible, they should be supplied with spit-cups, or cloths into which they can expectorate, and be individually furnished with literature explaining the danger of promiscuous expectoration. With the native miner any attempt of this kind would be impracticable. Careful routine medical examination should be made of the sick, and when a man is found to have tuberculosis he should be excluded from the mines. As far as the native is concerned, the most important single measure is that recommended for pneumonia, that is, scattering, and in the same way as recommended for pneumonia.

Disinfection in the dwellings of the tuberculous is useful and important, and should always be resorted to.

No argument is necessary to prove that by reason of close personal contact, if we have a hundred men in a room, each with 25 feet of floor-space, infection would spread more rapidly and generally than if we had fifty men in the same room having 50 feet of floor-space. It is equally evident that a larger number of persons would be infected, when infection was introduced into a room in which a hundred persons were living, than when introduced into a room in which six persons were living, the floor-space per capita being the same in the two cases.

Tuberculosis is a disease that can be particularly combated by fresh air, sunshine, cleanliness and roomy quarters.

MINERS' PHTHISIS

Miners' phthisis is a disease which has so far been steadily increasing on the Rand. The reports for 1903 show a rate of 0.05 per thousand, and that for 1912 a rate of 0.10 per thousand. This disease is essentially a silicosis, and is caused by particles of silica getting into the lung-tissue, through respired air, causing chronic inflammation, the tissue thickening until finally a considerable portion of the lung is destroyed for respiratory purposes. This condition of the lung brings about a low state of local vitality, so that an organism like the tubercle bacillus easily finds lodgment. At present on the Rand most persons with miners' phthisis die from an incidental tuberculosis implanted on a silicized lung, rather than from silicosis itself. The hygiene of this disease is obvious, that of laying the dust, so that particles of silica will not be floated in the air where they can be breathed. Some form of water-spraying apparatus is now very generally used on the Rand. I advise that such measures be generally and carefully enforced and extended. I believe that they will soon reduce miners' phthisis to a minimum.

CEREBROSPINAL MENINGITIS

Cerebrospinal meningitis is a disease that at times causes considerable mortality among native miners on the Rand. This is an infectious disease whose organism, so far as we know at present, is spread from person to person by crowding and contact. Scattering would also be the most effective sanitary measure against this disease, in addition to the general measures of cleanliness, air and light already referred to. Disinfection is probably more useful in this disease than in either of the diseases previously discussed.

TYPHOID FEVER

During the last four years you have lost 310 men on an average by death from typhoid fever. During 1912 you had 234 deaths in this class of employee, and during 1913, 249. Typhoid fever by vaccination is as preventable as is small-pox. This death-rate could be entirely wiped out at once. With your present organized force of medical men it would be neither difficult nor expensive. The vaccination itself causes nothing like the trouble to the person vaccinated as does the vaccination for small-pox. In general, there is almost no reaction, soreness or effect of any kind.

I recommend that all native employees and such of the white employees as so desire, be vaccinated for typhoid fever.

HOUSING THE NATIVE

The most serious sanitary defect that I notice in the mines on the Rand is the manner of housing the native. The quarters are much too crowded. He has in general 200 cubic feet of air-space, which would give him 14 feet of floor-space. The general objection to such crowding is that it causes the respired air to become vitiated. My great objection to such crowding is that it forces the occupants into close personal contact, and therefore largely increases the spread of any infectious disease. This applies particularly to pneumonia, tuberculosis and cerebrospinal meningitis. A large aggregation of men in one room is objectionable in itself. It is evident that if infection is introduced into a room containing a hundred men, it is more likely to affect a larger number than if introduced into a room containing six men.

In the French army they allow about 50 feet of floor-space to a man. Recently they have largely increased their army, which has caused crowding in their barracks. I see it stated in the newspapers that epidemic pneumonia is prevailing among the men, and that the French sanitary authorities attribute the epidemic pneumonia to this overcrowding.

I am satisfied in my own mind that the scattering from large barracks into single huts and small rooms was the important measure in its effects on pneumonia on the Isthmus. For the sanitation of pneumonia I would urge a similar measure on the Rand. Place your negro laborers in individual buildings, and bring in, and place with them, their families. This measure, I feel confident, would result with you as it did with us. In the course of about a year it reduced our pneumonia death-rate from 18.40 per thousand to 2 per thousand. It would probably reduce your present rate of 15 per thousand (the highest pneumonia monthly rate for 1913) to 2 per thousand. If this is not feasible at present, the nearest approximation to it should be attempted.

What is at once feasible, it seems to me, is to extend your family locations. At present all the mines have such a location where the native lives with his women and children. Wherever I have examined into these locations the pneumonia rate and the general death-rate are low. They are always among the very best class of native rates on the Rand. We recently examined into the condition of the city location at Klipspruit. Here about 2,800 natives, men, women and children, live in neatly constructed single dwellings, more or less separated, from 50 to 200 feet apart. The whole village, both inside and outside the dwellings, was well policed, and presented a clean and attractive appearance. We had the superintendent, Mr. Smith, go over the records, selecting the male native, over 18 years of age, and give us his records both for pneumonia and for general rate. We found that for the past three years, with an average of 750 natives of this class, the pneumonia death-rate had been 1.37 per thousand, and the general rate 9.17 per thousand, while the native rate for pneumonia in the mines on the Rand for the same year (1913) was 10.05.

It is a very striking coincidence that whenever we find the native on the Rand living as he does on the Isthmus of Panama, his health-rates are approximately as good as they are on the Isthmus. When the negro on the Isthmus lived in large barracks, as does the native in general on the Rand, his health-rates were fully as bad as those on the Rand. Wherever I have inquired, the compound manager has told me that he has more applicants for married quarters than he can accommodate, and that if he had more buildings he could fill them. Let each mine therefore put up cheap but comfortable buildings, as they find they have need for them. The native hut, of which Mr. Lloyd, your superintendent of recruiting, furnished me drawings and specifications, strikes me as being excellent. It has a circular wall with thatched roof. In this type of hut, concrete floors and glazed windows I consider quite unnecessary.

I saw a large village of these huts at the Arcturus mines. They were attractive and neat in appearance, complied with the needs of sanitation, and were economical in construction. In extending locations, it would be better, from a sanitary point of view, to erect huts rather than to extend the present buildings.

In extending these locations an eye should be had to the future. They should be laid out in streets and blocks with a view to eventually putting in a waterborne sewerage system.

Eventually, in this way, a considerable portion of the force could be placed in these villages, and the barracks mainly used for the unmarried men. This would begin at once to give more room in the barrack for the highly susceptible new boy. As the barracks ceased to be needed for the unmarried native, they could be slightly rearranged for native married families. This was very satisfactorily done at Panama. As we ceased to need the barracks for our unmarried negro laborer, we transformed them economically into comfortable married quarters.

A native labor force living with families near the mines would be more stable and contented than the present force. They would be old and experienced men and therefore more efficient, and from all points of view more economical and satisfactory to the mine manager than the present force.

The economy of this method of housing native laborers might be emphasized by calling attention to the fact that recruiting men costs about $5,000,000 (£1,000,000) per annum. The greater part of this expense can be saved by the construction of locations—such as Klipspruit—or building huts of the general type of those erected by natives at their kraals.

A force of married men living in such a location would be a permanent force of skilled workmen, always available as a source of labor for the mines.

A nominal charge for such huts should be made, such a charge as would pay for the hut, say in ten years, and also keep the huts in repair. Such a location would be self-supporting and would correct the unsatisfactory health conditions of the compounds by giving more floor-space per capita to those who continue to live in them.

Public sentiment will not approve the keeping of a large body of semisavage laborers in the community in such conditions as obviously to foster sexual crimes. Both the public and the laborer will insist on the native having his women and children. If the laborer cannot have his family with him at the mines, he will, as the country develops, seek other employment where he can have them.

On the order of the government, recruiting among the tropical natives ceased last March. If we were considering the sanitation of the tropical native alone, I should still more strongly urge scattering, as much as possible, as the proper sanitary measure for him against pneumonia. This dispersion I should bring about, if possible, by putting him in a hut with his family. If this were not possible, I should put him in huts, without his family, arranged so as to give him 50 square feet of floor-space. If huts were not possible, I should put him in barracks with the smallest rooms I had, arranged so as to give him 50 square feet of floor-space.

In general, the care of the compound yards showed everywhere neatness, cleanliness and commendable care and discipline; but when we came to examine the interior of the native living-quarters the very opposite was the case.

Food was always present in dirty and unkept vessels in considerable quantities; old clothing and wearing-apparel of all kinds, soiled and dirty, was littering up everything, and litter of all kinds was stowed away under the sleeping-platforms. I was told that discipline and cleanliness were not enforced in the sleeping-quarters from the fact that the authorities did not wish to interfere with the natives to such a degree as to make them dissatisfied. This is a very good general rule, and a population of the class of the ignorant native miner should not be worried with too many and exacting sanitary regulations. Indeed, I do not see that much in the way of correction could be done, even if the native cooperated, in the present crowded condition of the barracks. But give each man 50 feet of floor-space, and he can have an individual bed and box of some kind in which he could keep his personal belongings. It would then be no hardship to require him to keep his belongings to his own bed and in his own box.

If a number of small sheds, inexpensive in construction, and convenient to the sleeping-rooms, were erected around the compound, it would be no great hardship to require him to eat his food under this shed. In the receiving compound at Johannesburg, the native is required to eat his food on a concrete platform, and no food is allowed in the living rooms. Dr. Turner tells me that there is no particular objection on the part of the natives.

I am confident that if the sanitary necessity of keeping the barracks in a cleaner condition was considered, the details could be worked out gradually so as not to interfere to any great extent with the habits and customs of the natives.

A commendable effort is being made generally to correct this condition by cleaning up, taking out refuse, destroying bugs, whitewashing, etc. But this must be done (in the nature of things) very often. In the best-kept quarters which I have seen this is done about once a month, but in a few days conditions are as bad as ever. It is not feasible to make any considerable improvement in present conditions as long as the barracks are as crowded as they are, and as long as the men are allowed to eat and keep food in their sleeping-quarters.

I recommend that each native be allowed 50 square feet of floor-space; that he be furnished with an individual bed, and an individual box in which to keep his belongings; that the barracks be divided into smaller rooms to contain not more than from twelve to fifteen men; that no food or utensils of any kind be allowed in the dormitories, and that eating-sheds be erected about the compound, located conveniently to the dormitories. A good many of the men at present keep their food from meal to meal and consume it between times. They also use the mealie porridge for making fermented drinks. If it is necessary to allow this, to each native who asked for it, a locker in the eating-shed could be assigned. The expense of such changes would not be large. The increase in floor-space would cause a large expenditure, if the force were as full as it was a year ago. If you encourage your married locations, some room would be gained in the barracks in this way. The reforms could be carried out gradually. Those compounds could first be selected in which the death-rate was high. There are a considerable number of compounds in which the death-rate has been low for a number of years. They are frequently the old compounds which the native prefers, and therefore they contain a larger number of old boys. In all the cases into which I have examined the crowding there was not so great.

These two conditions, namely, the lesser crowding and the greater proportion of old boys, generally explain the better health-rates. Such compounds I should not interfere with. In this way gradual improvement could be brought about at no very large yearly outlay.

DIET OF THE NATIVES

The ration is another thing that has impressed me very strongly in inspecting the various mines. I have never seen so large a proportion of the ration supplied by one article as is here supplied by mealie meal. The two chief components of the daily ration are 2 pounds of mealie meal and $5\,^{85}/_{100}$ ounces of meat. This I think, a great deal too large a proportion of the carbohydrates for men doing the hard manual labor that the natives do. The mealie meal might be reduced, and the meat and other articles increased.

A soldier's ration in the British Army is 16 ounces of bread, 12 ounces of meat, and also an allowance of 3 pence per day for vegetables, and other articles. A miner does very much harder labor than the soldier. I think that his diet should be at least as good.

On the Isthmus we had a great deal of trouble as to rations. There was no particular disease among our laborers that we could attribute to diet, but they seemed to be underfed, and there was constant complaint. The whole matter of food was satisfactorily settled both for the negro and ourselves when the families came and when we established commissaries for the sale of food at cost. The negro then bought what he liked in such quantities as he wished, and his wife cooked it in the manner to which they had been accustomed. At the Premier mine they have three systems of feeding going on at once. The native can either eat his food at the regular mess, buy such cooked food as he likes, or buy food and cook it himself.

At the Kimberly mines the system of food-supply is altogether that of allowing the native to buy his own food. It seemed to be very satisfactory. This would be an excellent system of feeding to adopt generally, although I prefer our system on the Isthmus, where food is supplied the native at cost. The object of this measure is to give him an abundant food-supply in such a way that he can vary it as his tastes suggest. If you attempt to make a profit on food, you by so much defeat the object of your measure.

I am inclined to attribute scurvy to the large amount of mealie meal in the ration. It has been found that beriberi is caused by making polished rice the almost exclusive article of diet. It is due not to the rice itself but to the fact that the rice is polished. In polishing, the pericarp is rubbed off, and this pericarp contains substances that are necessary in the body economy. Mealie meal, as used on the Rand, has a similar outer coating removed in the process of mill-ing. Dr. Macaulay goes into this question, and brings some very strong evidence to prove that scurvy is due to having such a large proportion of the diet consist of the bolted mealie meal. If this is the case, it can be corrected easily and economically by having the meal properly prepared. This question should be investigated further.

On the Isthmus of Panama in 1906, each man bought his own food from a poorly supplied market, at a very high price, and cooked it himself. In 1908 he bought from a well-stocked market, at cost price, and had some one to prepare his meals.

We first started having each man take care of himself as far as food was concerned. Each laborer bought his uncooked food from the nearest native vender, and cooked it himself between working-hours This proved very unsatisfactory for several reasons. The laborer did not have time to collect his food and cook it between working-hours. He was also too much fatigued to do it properly. Our force increased so rapidly that we consumed everything that there was in the country. We then put up stores along the line, supplying food at cost, and also kitchens where it could be bought cooked at a reasonable price. This proved a distinct improvement over former conditions, but the matter of feeding was put on an entirely satisfactory footing, both to ourselves and to the negroes, by bringing the families over, and allowing each man to put up a hut for himself and his family.

Since that time we have had no trouble as to food for the negro, or dietetic diseases among them. Each negro now gets such food as he likes at cost, and his wife cooks it for him in the manner and quantities which he likes best. Present conditions as to food are entirely agreeable to both parties. The establishment of stores by the commission and selling at low price in no way interfered with opening of stores by private persons. Such stores existed in considerable numbers at all towns and were prosperous.

SEWERAGE AND WATER SYSTEMS

Another sanitary improvement completed at about this time was the introduction of sewerage and water systems. One of the prominent causes of death among our predecessors had been dysentery. Indeed, this disease is generally prominent in tropical countries.

Typhoid fever is another disease that we knew we should have to reckon with. In the hope of protecting ourselves against these two diseases we put in eight different water systems along the 50 miles of canal. Generally for getting water, we dammed the small streams near their source in the mountains, and piped the water down to the cities and villages along the line of the canal. About twenty sewer systems were put in at these villages. The sewerage systems were limited to the villages.

We see, therefore, that several things happened about the time of the disappearance of our epidemic of pneumonia.

The men were scattered from crowded barracks to individual huts in the hills, and houses in the towns.

An insufficient, poor, expensive food-supply, badly cooked, was replaced by one abundant in quantity, good in quality, cheap, and very well cooked.

Water-supplies and sewerage systems were everywhere installed.

It is an obvious axiom of both hygiene and economy that no unnecessary tax should be placed on the strength of the native laborer. With these objects in view, he should be conveyed to his place of labor, and away from it, with as little delay and as little exertion to himself as possible.

The present bucket system of disposing of night-soil should be replaced by a water-borne system. This is possible everywhere on the Rand above surface. This bucket system promotes the breeding of flies, and the transference of diseased fecal matter by these insects. The water-borne system would be economical as compared with the present bucket system. Several of the mines have at present partial water-borne systems. I commend particularly that of the Crown mines.

Where a water-borne system is not feasible I consider a properly constructed, fly-proof, pit-closet preferable to the present bucket system. It is more sanitary and less expensive.

Underground a water-borne system seems to be impracticable from a mechanical point of view. A vault system would be a decided improvement on the present bucket system, both from a sanitary point of view and from the point of view of economy. I mean by a vault system the excavating of a small vault and placing on it a fly-proof seat wherever a closet is needed. I should use no water whatever. Allow only in the vault fecal matter and urine. When the vault is filled, close the vault and move the seat to a new location, or empty the vault with an odorless excavator. I should empty the vault or move the seat as seemed most convenient and economical. Vaults that were located on the outer workings, and that were to be used less than a year, I should think could be more economically closed than emptied. Vaults that were located near the center of the workings, and were to be used for several years, might be emptied when filled. This should be determined purely from the point of view of expense.

There would be some sanitary advantage in closing a vault rather than emptying it. I think that from an administrative point of view it would be found more economical to close a vault and build a new one, rather than to empty it. The length of time that a vault would last would be determined by its size.

It has been objected that there would be leakage through cracks in the rock from these vaults into the mine below. There would be so little fluid, the urine only, that I do not believe this would be the case. If the deposit were found to be too fluid, this condition could easily be remedied by the use of dry earth or some similar drying material. I have seen this system used on a large scale in cities with little objection as to odor or inconvenience. The great sanitary objection to the present bucket system is against the daily handling and carrying through the mines of fecal matter, and the necessary fouling and disagreeable odors that go with such a system. The great sanitary advantage of a vault system in such locations as the mines is that the excreta are permanently disposed of as soon as deposited.

The economical disadvantage of the bucket system lies in the considerable expense of daily transporting the buckets to the surface, emptying, cleaning and returning, as well as the expense of plant. The only expense of the vault system would be that of originally digging the vault and then of closing it.

A system of septic tanks might be considered if it should be found more economical than the vault. I think that such a system could be planned so that there would be no objection to the effluent passing into the general drainage system.

THE FLY NUISANCE

I commend the effort at some of the mines to abate the fly nuisance by trapping and otherwise. All eating-houses, kitchens, dining-rooms, or wherever cooked food, or food, such as fruit, that is eaten uncooked, is exposed, should be well screened as a protection against these insects. In addition, traps, fly-paper and such devices as tend to destroy flies that have gained entrance to these places should be used. The present crusade against fly-breeding should be encouraged in every way. Such a movement is one of the best educators that I know of.

The disposal of garbage is generally satisfactory. It is in general dumped at some out-of-the-way place sufficiently removed from the mine so that the odors and the flies are not troublesome. I should recommend, however, the general use of crematories. The crematory system is generally more satisfactory than the dump, from the fact that it does away with fly-breeding and disagreeable odors. In many cases it is more economical from the fact that the haul is much shorter in the case of the crematory.

Alcohol for the native, I believe, is an unmitigated evil. It is in no way necessary for his health; in fact, it is always hurtful.

THE LIQUOR QUESTION

On the Isthmus we had our laboring force located on the line of Canal about 50 miles in extent. In this distance we had about twenty towns. At first we allowed as many liquor establishments as chose to pay the high license, $1,200 per year. As time went on we gradually abolished saloons in town after town, till last year, liquor-selling was finally abolished on all the Zone. Saloons were gradually abolished in district after district, generally at the request of the engineer in charge of the working force in that district.

The two Panama towns of Colon and Panama, at the northern and southern end of the Canal, are not under the jurisdiction of the commission as far as regards liquor-selling. There is no restriction on an employee going to these towns and getting liquor as he wishes and bringing it out into the Zone to his own home. The only prohibition is that it must not be sold in the Zone. But to get liquor he has to make a longer or shorter railroad trip, and go to considerable effort. Our experience has shown that there are a considerable number of men who do not care enough for liquor to make the effort, and therefore do without. Of course there are a large number who bring liquor out and drink as much as ever; but on the whole our prohibition of its sale has largely decreased drunkenness. It has increased the efficiency of our working force so much that generally the men in charge of the laborers in the different districts have asked to have their districts included within the prohibited area. I believe that it would be best for the native on the Rand to have no alcohol at all.

That alcohol is not a necessity for the native is evidenced by the condition of affairs at the De Beers mine. There they have compounds that are kept rigidly closed. Neither kaffir beer nor any other alcohol is given him. Yet he remains in perfectly good health and seems contented. He likes the life at Kimberly better than he does that on the Rand. This is evidenced by the fact that their force is always full, yet they do not have to recruit, whereas on the Rand the opposite is the case.

One cannot see these mines, or look over their statistics, without being struck by the many advantages a closed compound has in the management of these semicivilized natives.

MEDICAL SERVICE

Attention should be given to the methods at present in vogue of getting the East Coast boy from his home to the mines. In my opinion there is opportunity here of the native becoming infected with both pneumonia and tuberculosis before he reaches the mines.

In any case some machinery is needed for carrying out a system of sanitation. You have on the Rand now about fifty-four mines, each entirely independent as to the sanitation and care of the sick. About thirty-eight physicians are employed by these mines. Each is doing the same work as the other. That is, each man on his own mine has to do the surgery, the medicine, the pathologic work, the sanitary work and the Roentgen-ray work. It is impossible for each man to be specially qualified in all these branches. You have sixty-two hospitals, treating 2,150 patients. None of these hospitals is equipped or manned in a first-class manner. In general, the larger the hospital the better manned and equipped. The nursing force in native hospitals is made up of natives who have neither the intelligence nor training for such work. All is being done, probably, that can be done under the present system of numerous small hospitals. It is impracticable from an economic point of view to equip all these small hospitals with a first-class instrument outfit in every direction, and if it were possible economically, one doctor could not acquire the skill and experience for using them all. If a combination could be effected, a much higher state of efficiency could be brought about at no increase of cost. If all the sick could be brought together into one hospital, they could be cared for at less cost than in sixty-two hospitals. You could select the best qualified doctor among your present men, and put him in charge of the surgery. With such a service as he would have, in the course of a few years, he would become the peer of any surgeon anywhere, and you would be able to give your employees as good surgical attention as the very wealthiest could command. You could afford to equip such a hospital with first-class surgical appliances of every kind at a less cost than the moderate supply at present given to the sixty-two hospitals now in use. The same could be done on the medical side.

In the Bacteriological Institute you already have an institution and personnel that could be used for the pathologic work, and the patient could be brought to hospital by the railroad, which connects with all the mines, and by motor ambulance and wagons.

With 200 white trained nurses, male and female, in such an institution, you could select your subordinate native nurses from the more intelligent and better educated natives, and thus secure a first-rate nursing force.

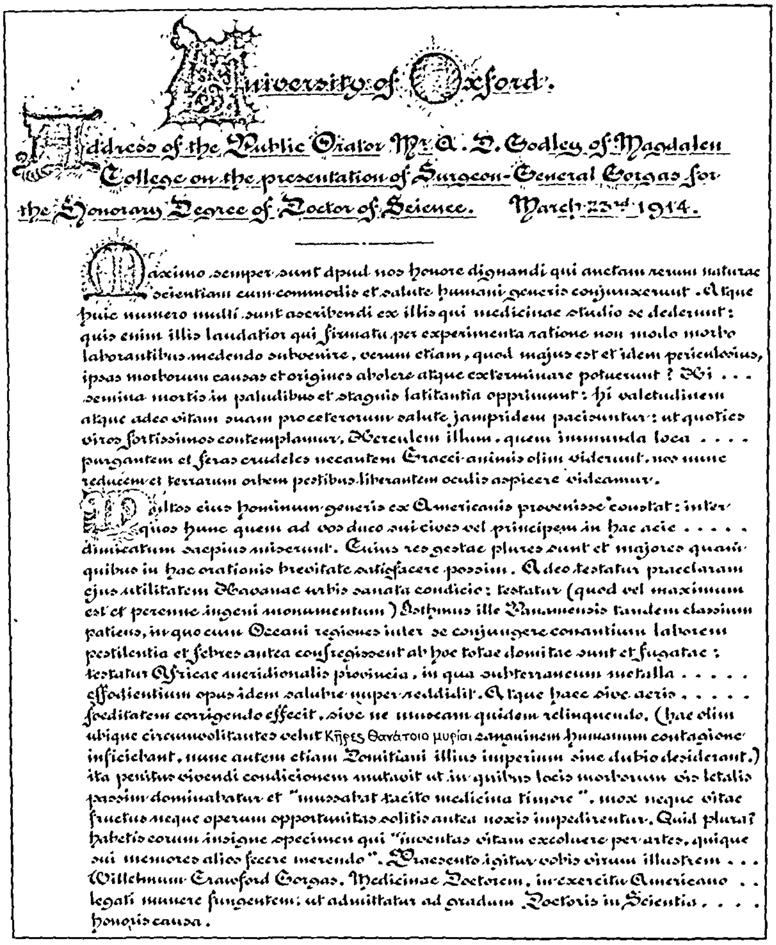
Such a hospital scheme has been adopted by us on the Isthmus for our force of 60,000 men scattered along a railroad 50 miles in extent, and it has been for us both economical and satisfactory. I believe that you could adopt the same plan for your 200,000 men, who, it seems to me, are in a comparable condition.

The construction of such a hospital need be no more expensive than your barrack construction, if the hospital were built in single story on the pavilion plan. I believe that eventually you will have to provide more barrack space, and the present hospitals could be used as such.

In a large hospital of this kind you could keep in better touch with the character of disease affecting the employees, which is in itself a considerable sanitary advantage.

With a pathologic department making all the necropsies, you would have greater protection than you now have on the question of paying claims, and greater accuracy and uniformity in diagnosis.

You could select the men best fitted and place them in charge of the sanitary work. These men should devote their whole time to their work, and be in thorough and constant touch with the sanitary conditions of all the mines. One man should be chief, and on the staff of the Chamber of Mines; he should be responsible to the Chamber of Mines, and entirely independent of the management of the individual mines. There need be no conflict with the present public officials in such an organization. If such an organization were in effect now, when the chief sanitary officer of the Chamber of Mines found a mine not complying with the present public sanitary ordinance, he would report the matter to the Chamber of Mines. The Chamber of Mines could either take the matter up with the mines concerned, or directly report the defect to the medical officer of health of the district. If it were the enforcing a sanitary measure not covered by public ordinances, but which had been authorized by the Chamber of Mines, the chairman of the chamber could take the matter up directly with the mine management. For instance, if the mines at present associated had authorized the Chamber of Mines to enforce as far as possible dispersion, the measure which I recommend for the sanitation of pneumonia, the chief sanitary officer would be in constant touch with all the compounds. He would have in view the desirability of increasing the married location as rapidly as possible, so far as was compatible with economy and expediency. If, under these circumstances, the chief sanitary officer found a mine where the married location was full, and there were applicants on hand for additional married quarters, he would urge the erection of additional accommodation on the mine management. If a satisfactory agreement could not be arrived at between them, the chief sanitary officer would take the matter up with the Chamber of Mines.



University of Oxford.

Address of the Public Orator Mr. A. D. Godley of Magdalen College on the presentation of Surgeon-General Gorgas for the Honorary Degree of Doctor of Science. March 23rd 1914.

Maximo semper sunt apud nos honore dignandi qui auctam rerum naturae scientiam cum commodis et salute humani generis conjunxerunt. Atque huic numero multi sunt ascribendi ex illis qui medicinae studio se dederunt: quis enim illis laudatior qui firmata per experimenta ratione non modo morbo laborantibus medendo subvenire, verum etiam, quod majus est et idem periculosius, ipsas morborum causas et origines abolere atque exterminare potuerunt? Hi . . . semina mortis in paludibus et stagnis latitantia opprimunt: hi valetudinem atque adeo vitam suam pro ceterorum salute jampridem paciscuntur: ut quoties viros fortissimos contemplamur, Herculem illum, quem immunda loca . . . . purgantem et feras crudeles necantem Graeci animis olim viderunt, nos nunc reducem et terrarum orbem pestibus liberantem oculis aspicere videamur.

Multos eius hominum generis ex Americanis provenisse constat: inter quos hunc quem ad vos duco sui cives vel principem in hac acie . . . . dimicantem saepius viserunt. Cuius res gestae plures sunt et majores quam quibus in hac orationis brevitate satisfacere possim. Adeo testatur praeclaram ejus utilitatem Havanae urbis sanata condicio: testatur (quod vel maximum est et perenne ingeni monumentum) Isthmus ille Panamensis tandem classium patiens, in quo cum Oceani regiones inter se conjungere conantium laborem pestilentia et febres antea confregissent ab hoc totae domitae sunt et fugatae: testatur Africae meridionalis provincia, in qua subterraneum metalla . . . . effodientium opus idem salubre nuper reddidit. Atque haec sive aeris . . . . foeditatem corrigendo effecit, sive ne muscam quidem relinquendo. (hae olim ubique circumvolitantes velut Κῆρες θανάτοιο μυρίαι sanguinem humanum contagione inficiebant, nunc autem etiam Domitiani illius imperium sine dubio desiderant.) ita penitus vivendi condicionem mutavit ut in quibus locis morborum vis letalis passim dominabatur et "mussabat tacito medicina timore", mox neque vitae fructus neque operum opportunitas solitis antea noxis impedirentur. Quid plura? habetis eorum insigne specimen qui "inventas vitam excoluere per artes, quique sui memores alios fecere merendo". Praesento igitur vobis virum illustrem . . . Willelmum Crawford Gorgas, Medicinae Doctorem, in exercitu Americano . . legati munere fungentem: ut admittatur ad gradum Doctoris in Scientia . . . . honoris causa.

Fig. 1.—Address of the Public Orator of the University of Oxford on the presentation of Surgeon General Gorgas for the honorary degree of Doctor of Science. Made on sheepskin in four colors (see editorial department). In the original the following English translation is appended. That it may be more easily read we have reproduced it letter for letter.

THOSE are most to be honoured by us who have increased knowledge and thereby promoted the welfare of the world. Such are many students of medicine: it is a fine thing to have the scientific knowledge which can cure disease: but theirs is a still finer if more dangerous task who can extirpate the causes from which disease springs. It is such men who destroy the seeds of death which are bred in swamps, risking their health and even their lives to serve their fellows. These heroes are a modern realization of the legend of Heraclu, the cleanser of foul places and the enemy of evil beasts.

THE eminent American who you see today has like many of his countrymen fought in the forefront of the battle. His achievements are too numerous for me to relate in detail. Suffice it is say that it is he who cleansed Havana: it is he who put fever and pestilence to flight in the Isthmus of Panama, and made possible the long-thwarted construction of the great inter-oceanic waterway: it is he who has recently improved the sanitary conditions of the South African mines. He purified foul air; he waged war on the myriad swarms of death disseminating mosquitos. The result has been an amelioration of the conditions of human life in plague-haunted districts, where once "in silent fear the helpless healer stood", and it is now possible to live in comfort and to work with advantage. There can be no better example of those "Whose skill hath served the human lot to raise, and won a name that endless ages praise."

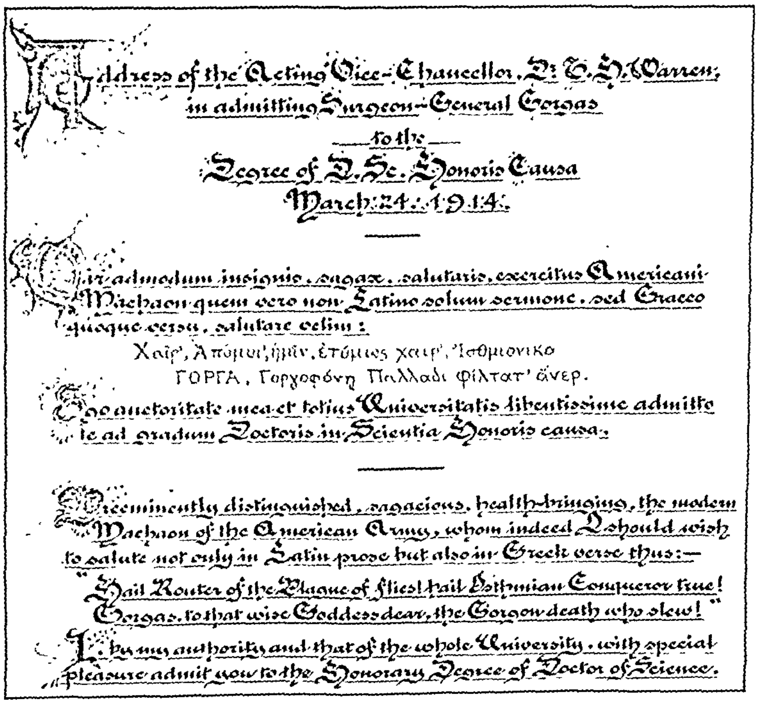
Or, if the chief sanitary officer found the pneumonia rate high in any particular compound or building, he would see that the proper corrective measures, as outlined above, were applied. On the other hand, in compounds and buildings in which the health-rates were satisfactory, he would not make any change. Such effort applied for a year or two would gradually bring about a uniform system of sanitation. If you had had such a system for the past few years, a sufficient force constantly devoting their whole time and attention to sanitation, you would have by this time reduced pneumonia to a minimum. If it were adopted now, I believe that at the end of a few years pneumonia would be reduced to a minimum. If it were feasible to adopt the whole scheme as outlined, which is the scheme that we used at Panama, I see no reason why the results should not be the same, the rapid reduction of pneumonia to a minimum. Your native labor force is evidently undergoing a gradual process of immunization. In 1903 and 1904, your total rate from pneumonia was 25.31 per thousand.[1] For the first nine months of 1913 this had fallen to 8.8 per thousand per annum. The fall has been more rapid during the last months of this period, on account of the stoppage of the introduction of the more susceptible native from the tropical regions north of latitude 22. This process will continue going on for several years till the whole of the native laboring population reaches the state of immunity that the Cape native has now. This, I take it, is the maximum that the native is capable of reaching under your present sanitary conditions. I think that this could be still further reduced by the sanitary improvements suggested. I base this opinion on our experience on the Isthmus, where the negro pneumonia rate has been reduced from 18.74 in 1906 to 0.42 for the first eight months of 1913. During one month in 1906, it was higher than it has ever been on the Rand for a similar body of men, and for a similar period, 43.41 per thousand. Meanwhile, if you introduce the native from the non-immune regions, your rate will go up. This, I think, could in great part be prevented by housing the tropical native in huts as suggested, and by furnishing him with cooked or uncooked food to be purchased as he liked. In the course of a year or two he would acquire immunity, and would then be on the same footing as a boy from the South. The success of any system of sanitation which is more or less new to any locality will depend a great deal on the choice of the man who has the charge of carrying it into execution. If he believes in it, has tact, and is enthusiastic and persevering, it will succeed. If he is discouraged by difficulties and opposition, he will fail even if his system is correct. He will find many men who have ideas of their own on these subjects, and who will point out the impossibility of carrying out the plans agreed on. It will be the health officer's business to familiarize himself with all the details involved and to find reasonable means for meeting reasonable objections.

Of these sanitary recommendations, I consider that of increasing the floor space to about 50 feet the most important and pressing, and by far the best way of doing this to be the village hut system and the introduction of families. If this particular method cannot be carried out, effort should be made to come as near it as feasible.

Second in importance, I consider improvement in the hospital system and care of the native sick. This can be best carried out by a central hospital. If a central hospital is not feasible, such concentration of hospitals as is possible should be made.

The third in importance is the establishment of a central sanitary bureau or department under the Chamber of Mines, the head of this department to represent the mines on all sanitary questions.

The present regulations regarding matters of sanitation should be revised so that the sanitation of the mines might be accomplished by the authority of one official, government or municipal, instead of with five different interested parties, as is now the case.



Address of the Acting Vice-Chancellor, Dr. T. H. Warren,
in admitting Surgeon-General Gorgas
to the
Degree of D. Sc. Honoris Causa
March 24. 1914.

Vir admodum insignis, sagax, salutaris, exercitus Americani Machaon quem vero non Latino solum sermone, sed Graeco quoque versu, salutare velim:

Χαῖρ', Ἀπόμυι', ἡμῖν, ἐτύμως χαῖρ', Ἰσθμιονίκα
ΓΟΡΓΑ, Γοργοφόνῃ Παλλάδι φίλτατ' ἄνερ.

Ego auctoritate mea et totius Universitatis libentissime admitto te ad gradum Doctoris in Scientia Honoris causa.

Preeminently distinguished, sagacious, health-bringing, the modern Machaon of the American Army, whom indeed I should wish to salute not only in Latin prose but also in Greek verse thus:—

"Hail Router of the Plague of Flies! hail Isthmian Conqueror true!
Gorgas, to that wise Goddess dear, the Gorgon death who slew!"

I, by my authority and that of the whole University, with special pleasure admit you to the Honorary Degree of Doctor of Science.

Fig. 2.—Address of the Acting Vice Chancellor in admitting Surgeon General Gorgas *to the degree of* Doctor of Science. Reproduction of an illuminated manuscript made upon sheepskin in four colors: red, gold, blue and black.

Report of Tuberculosis Commission in Kentucky.—Kentucky, by an act of the legislature, established a commission in 1912 for the study of tuberculosis. The first report of that commission, a cloth-bound pamphlet of sixty pages, sets forth what has been accomplished. The work so far has been chiefly preliminary and educational. An exhibition car and moving-picture exhibit, teachers' institutes, a nursing service and the distribution of much printed matter have been some of the means employed. Special county campaigns in cooperation with local organizations have also been conducted. The further work of the commission will consist not only in keeping up the educational campaign, but also in the establishment of local sanatoriums in the districts into which the state is to be divided. The report shows that much interest has been aroused and much good work done.

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[1] Final Report of Mining Regulation Commission, i, Table 1.

THE TREATMENT OF HEMORRHAGIC DISEASE OF THE NEW-BORN BY DIRECT TRANSFUSION OF BLOOD

WITH A CLINICAL REPORT OF FOURTEEN PERSONAL CASES

V. D. LESPINASSE, M.D.
CHICAGO

The chief causes of this condition are: syphilis, infection, hypoplasia of the coagulating elements of the blood and asphyxia. External factors, such as parity, the fetal presentation, duration of labor, complications of labor, obstetric operations and chloroform, are of minor importance. Syphilis, according to Holt, is a causative factor in from 2 to 6 per cent. of the cases, contrary to a generally current idea that syphilis is always the cause.

The pathology of this condition is yet rather obscure. In nine personal post mortems, Townsend states that there were no gross lesions except the hemorrhages, and in one case the blood-culture was negative. He also reports eighty-one post mortems from the literature, in most of which no lesions of any sort were found, except hemorrhages. In a few cases the following lesions were present: lesions of syphilis, enlarged spleen, enlarged liver, inflammation of the umbilical and portal veins and acute fatty degenerations.

Some cases give a positive and others a negative blood-culture. The bacteria found are the common ones. Wassermann reactions have been made in a few cases, and are positive in some and negative in others. The chief pathologic lesions are the same as the clinical lesions, namely, hemorrhage and its consequent anemia.

The symptomatology is quite striking. In some cases there are a few premonitory symptoms, such as restlessness, refusal to nurse and a slight elevation of temperature; the chief symptom, however, is spontaneous hemorrhage. The site of this hemorrhage may be from any of the following sources: intestines, stomach, mouth, nose, navel, ecchymoses of skin, cracks of the skin, pressure-points, as heels and sacrum, meninges, genito-urinary tract and eyes.

As the hemorrhage persists, there is a progressive whitening of the child's skin and a gradual drying up of the tissues. The face becomes pinched; the muscles become weaker and weaker; the pulse becomes rapid, thin and weak; respirations are deep and sighing; the cry is weak, it may even be a whine; coma comes and death soon follows.

The diagnosis is very easy, as there is no other condition that even simulates this disease, except traumatic hemorrhage.

In hemorrhage of the gastro-intestinal tract, inspection of the stool in the diaper shows a black tar-colored mass with a pink fringe around the edge. The differential diagnosis of these conditions is of minor importance. The treatment is the same whether the case is one of hemorrhagic disease of the new-born, Winkel's disease, Buhl's disease, jaundice with hemorrhage or hemophilia. Brown and Swift divide these cases into three clinical types, namely, the umbilical, the seromucous and the purpuric, with a mortality of 60, 50 and 22 per cent., respectively. This was before the use of serum and direct transfusion of blood.

PROGNOSIS

The hemorrhage usually appears from the second to the fifth day of life. The earlier the onset of the hemorrhage, the more serious the prognosis. In luetic cases it usually appears from the seventh to the ninth day. One of the chief terrors in this disease arises from the fact that in half the fatal cases death occurs suddenly within twenty-four hours or less from the onset of the bleeding; hence, if the child is to be saved, it must have immediate attention. Townsend reports 32, in which 25 patients died and 7 recovered; 9 of those that died lived less than a day from the detection of the bleeding, and 4 lived only one day. It must not be forgotten, in the bowel cases, that the amount of blood that is vomited or passed by rectum does not represent the patient's entire loss of blood. The intestinal tract may be full of blood and the amount passed in the stool will be only a small percentage of the total blood lost to the baby.

The cases in which there is bleeding from the bowel are often quickly fatal, the entire clinical course being only a few hours; the shortest clinical course in my series was four hours from the discovery of the bleeding to the virtual death of the baby. Frequently the babe will nearly bleed to death into the bowel or stomach before any of the blood is passed by rectum or vomited. In the umbilical and purpuric types, the hemorrhages, being external, are discovered earlier, and the loss of blood can be accurately estimated. According to Dr. Jacobi, the total blood in a baby is equivalent to one-nineteenth of its body-weight.

Using this as a basis, a baby has approximately 1 ounce of blood to an adult's quart. Hence, a hemorrhage of 1 ounce in a new-born baby is equivalent to 1 quart in an adult.

TREATMENT

In the treatment of hemorrhage of the new-born, there are three indications: First, the hemorrhage should be stopped; second, the lost blood should be replaced; third, the infection should be overcome. Transfusion of live non-clotted blood meets all these indications in an ideal manner. Transfusion stops the bleeding at once, replaces the blood lost and gives the baby fresh complement and antibodies to aid it in overcoming any infection that may be present. Some of these cases are due to asphyxia and consequent fatty degenerations.

A well-transfused baby has more red blood-corpuscles than normal, each one capable of carrying oxygen to every portion of the baby's body, and this oxygen is available to prevent further fatty change and to remove that already formed. Direct transfusion of live, non-clotted blood from a healthy adult meets all the indications in hemorrhagic diseases of the new-born, better than any other method. Direct transfusion of blood will cure in practically every case. It is never too late to transfuse if there is still the slightest auricular beat, or even if the heart has apparently stopped for a short time; by means of a transfusion of blood the heart may be started again (Case 1). The patients who bleed from the bowel should be transfused early, because of the liability of sudden death from a massive hemorrhage into the bowel. Most surgical operations are of a destructive character and accompanied by a shock, which requires a certain amount of bodily vigor to overcome. Direct transfusion of live, non-clotted blood is not a destructive

TABLE 1.—DETAILS OF AUTHOR'S CASES

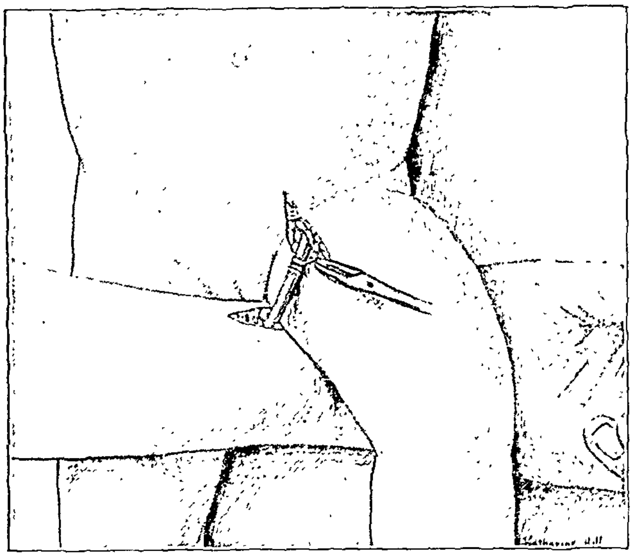
Case	No. of Children	Weight at Operation Lbs. Oz.	Age of Baby Hours	Source of Hemorrhage	Treatment Before Operation	Duration of Hemorrhage, Hours	Condition Before Transfusion	Condition During Transfusion	Condition After Operation	Remarks	Ultimate Results
1. Dr. DeLee	2	.. ..	48	Rectum; stomach	None	4	Almost pulseless; intense pallor; comatose	Heart not audible for 5 minutes	Very red; strong	Heart was heard about 15 seconds after transfusion was started. This babe was practically brought back to life. Gained 1 ounce per day for first seven days after transfusion	Recovery
2. Dr. Bellows	4	.. ..	34	Mouth; rectum	None	26	Anemic	Skin became red	Normal	Weighs 25¼ pounds at 22 months old, fine healthy boy	Recovery
3. Chicago Lying In Hospital, Dr. Horowitz	1	7 2½	9*	Bladder; circumcision wound	Clamps; sutures	24	Pale; very anemic	Became pink; first ear, cheek, general	Normal	Took the breast three-fourths hour after transfusion	Recovery
4. Dr. Woods	2	5 1	20	Mouth; rectum	Gelatin; horse-serum	5	Anemic; comatose	Color better; still stuporous	Somewhat stronger but not much	Luetic parents. Baby's blood contained staphylococci and gave a + Wassermann.	Death five days after transfusion
5. Dr. H. M. Stowe...	..	6 2	24	Circumcision wound	None	†	Very anemic	Color red; stronger	Excellent	Cesarean section baby. Ether used as anesthetic	Recovery
6. Dr. Gill	1	.. ..	72	Rectum; stomach	None	48	Very weak	Became red	Good	Delivered by high forceps. Progressed normally after transfusion	Recovery
7. Dr. Roberts	1	.. ..	72	Rectum	None	48	Anemic	Became red; Stronger	Excellent	Nursed mother one hour after transfusion. Now is a fine baby	Recovery
8. Dr. Bellows	2	4 ..	7*	Umbilical cord, mouth skin, finger-tips, heels, sacrum	Umbilical cord buried	48	Very weak; very anemic	Very red; stronger	Cried lustily; quite strong	First baby died of lues. Patient had condylomas, snuffles and macules on the skin	Death nine days after transfusion
9. Dr. Knapp	1	8 ..	10	Bowels; mouth	Horse-serum	72	Grave; almost gone	Gradually improved	Greatly improved	Passed old blood for two days, otherwise normal	Recovery
10. Dr. W. L. Ruggles..	7	5 ..	72	Frenum of tongue; intestine	Normal salt; horse-serum	48	Exsanguinated	Pulse aflicker; gasps at long intervals	Excellent	Regained original weight at age of 4 weeks; perfectly well. Bleeding from tongue ceased at once, the mouth filling with a dense black clot. This was removed and the area was dry.	Recovery
11. Dr. Piper	7	9 5½†	40	Bowels	None	12	Thirsty; restless; crying constantly	Became red; abdomen became prominent	Very good, gained 14¾ oz. in weight	Stools normal thirty hours after transfusion	Recovery
12. Dr. Cleary	2	.. ..	72	Bowels, stomach, mouth, subcutaneous	Horse- and human-serum	48	Poor; very anemic; very weak	Improved as blood flowed in	Excellent	Treated with human serum for 30 hours. Had massive hemorrhage and almost died before transfusion. Weighed 10½ pounds at 4 months	Recovery
13. Dr. Cleary	1	6¼ ..	36	Bright blood from bowels	Horse-serum	9	Restless; dried up; very anemic and weak	Red blood passed by bowel; improved	Good; color fine	Bright red blood by rectum on the table. No more red blood passed. Weighed 7½ lbs. at age of 20 days	Recovery
14. Dr. McQuarie	2	7¼ ..	96	Intestine	None	12	Pale; cold; unable to nurse; very feeble	Became red, then blue, then intense red all over	Fine; red all over as in scarlet fever	Nursed one hour after transfusion	Recovery
15. Drs. Marcusson and Dorland	1	.. ..	6*	Bowel	Gallic acid; adrenalin; stypticin by hypo	96	Very anemic; very weak; marked pallor; fed with medicine dropper	Became red; cried lustily	Very good; strong; nursed at once; no more blood	Continued to gain; nurses and in every way is strong and well; nursed immediately after transfusion	Recovery

* Days. † Unknown. ‡ With clothes.

operation; instead of inducing shock, the transfusion overcomes shock. The postoperative condition of the baby after direct transfusion of blood is very much better than the preoperative condition.

CLINICAL PICTURE

When first seen a bleeding baby is anemic, pale, weak, restless, passing tarry stools frequently and having a dried-up appearance. Later on the baby becomes limp and can hardly cry, and is as white as the proverbial sheet, blood is oozing from the mouth or from the navel, and there are purpuric spots scattered about more or less diffusely over the skin. The diaper is full of a black tarry mass, which may show red blood around the edges. During the progress of the transfusion, the child's color gradually becomes pink, then red, first on the lips and ears; then little pink spots are scattered diffusely over the body, and finally, after the baby is filled with blood, may become as red as an ordinary scarlet-fever patient. The hemorrhage from the various lesions cease as if they had been clamped with artery-forceps; by the time the transfusion is completed, the lesions are absolutely dry. In the wound that is made on the baby to dissect out the vein, one can note the formation of a firm, hard clot. When the wound is first made, the blood that flows looks like poor red ink. The coloring-matter seems to be in little particles floating in the serum. As the transfusion progresses, the blood becomes redder and redder, and finally the wound becomes filled with a firm, hard clot. Simultaneously with the color-changes in the skin, there is a great improvement in the baby's general condition. The cry becomes vigorous and he kicks with more strength; when the wound is being sewed, he makes a great protest every time the needle is passed. Finally, when the babe is taken back to his mother, he is strong enough to nurse and weighs from 8 to 14 ounces more than he did before the transfusion. After the operation, the baby nurses and sleeps quietly, the restlessness is gone; the temperature drops to normal, the old blood is passed out of the intestine in a day or two and the babe gains weight as fast as a normal babe, or even a trifle faster.



Position of baby and the arm of the donor in direct transfusion. The radial artery of the donor and the femoral vein of the baby are used for the transfusion, which is done according to the Crile technic.

MORTALITY

In my series of cases there have been no deaths from hemorrhage. Two patients died of syphilis, one five days and the other nine days after transfusion. My cases varied in severity from one in which the patient was practically brought back to life, to others in which there was less immediate danger. If we compare this mortality with that of cases treated by other methods, we find that the same types of syphilitic patients die and that in severe bowel cases the patients die as in most of the other types of cases that are treated late. Transfusion cures in these bowel cases and all the late cases provided it is done before the baby is actually dead. (In three cases in which I have been called I found the baby dead.) Direct transfusion of blood has cured after all other methods failed. My plea is to transfuse early and take no chances of a sudden hemorrhage before anything can be done, as almost happened to me in Case 12.

The *amount of blood received by the baby in Case* 11 was 14¾ ounces by weight. In Case 12 the baby was weighed just before the transfusion; twenty-four hours after the transfusion he weighed 15 ounces more. This represents 421.5 c.c. of blood in Case 11 and 428.5 c.c. in Case 12. Some may be inclined to doubt these weights, as at first glance they seem rather excessive. To confirm them I made the following experiment: A dog weighing 7½ pounds without any preliminary bleeding was transfused from a dog weighing 15 pounds. The time of transfusion was five and a half minutes. At the completion of the transfusion, the abdomen of the recipient was rather prominent, the mucous membranes of the mouth were very red, and the dog had gained 18 ounces in weight. The donor was practically dead at the completion of the transfusion. Hence, this small dog contained all of his own blood and all the blood from a dog twice as big as himself. The recipient recovered from the anesthetic and was in excellent physical condition, in no way the worse for having received this large amount of blood.

After transfusion, fresh blood disappears from the stool at once, showing cessation of hemorrhage; tarry stools may continue from ten to forty hours after transfusion, being the old hemorrhage gradually expelled. One of my patients the second day after the transfusion had one stool which contained a few flecks of bright blood (Case 1).

In hemorrhage of the new-born the patients are not hemophiliacs; they are not bleeders in after-life at all. All sorts of operations have been performed on these babies from one week to several months after the bleeding has ceased, and there has been no extraordinary hemorrhage. These children grow and become normal healthy persons. Rapidity of transfusion should be *considered carefully; if the blood is* allowed to enter the vascular system of the baby too rapidly, there will be a temporary dilatation of the heart and the baby will become blue about the face and on the feet and hands. When this occurs, the blood-flow should be stopped until the red color returns. Patient 5 had a double femoral vein, an anatomic anomaly that complicated the operation considerably. The smallest baby was Patient 8, weighing 4 pounds. In Case 1 the heart could not be heard for about five minutes before blood was transfused. The heart was heard a few seconds after the flow was started, and in a few seconds more the heart-beat was visible.

The father was the donor in ten cases, the mother's half-sister in one and a non-relative in three.

The blood-vessels used were the radial artery in seven cases and a forearm vein in seven cases on the donor; on the baby the femoral vein was used in four instances and the jugular in ten.

The duration of the transfusion varied from five to fifteen minutes. In the case that took fifteen minutes, Case 11, the father fainted, reducing his blood-pressure so low that it took longer to fill the baby with blood.

Table 2 shows the cases that have been reported in the literature. In their essentials they are all exactly like my own cases, details of which are given in Table 1.

TABLE 2.—CASES FROM THE LITERATURE

Reporter	No. Cases
Soresi, New York	9
Vincent, Boston	7
Cooley and Vaughan, Detroit	1
Bernheim, Baltimore	1
Murphy, Boston	1
Berg, New York	1*
J. J. Hubbard, Boston	1
Alexis Carrel, New York	2
V. D. Lespinasse, Chicago	14†
Total	37

* Syphilitic and died.

† Two syphilitic patients; both patients died.

Three deaths and thirty-four recoveries.

CONCLUSION

Direct transfusion of blood stops the bleeding, restores the lost blood and aids in overcoming infection. Direct transfusion of blood has cured where all other methods have failed. Transfusion should be used early, but so long as there is a spark of life evident, it is never too late to transfuse.

The experimental part of this work was done in the Laboratory of Experimental Surgery of Northwestern University Medical School.

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COMPOUND FRACTURES OF THE BONES OF THE EXTREMITIES *

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This paper may be better followed and understood if at the outset its matter is indicated in the following postulates:

1. In civil practice a compound fracture is always not only a solution of the continuity of a bone, but also a lacerated wound of the soft tissues in continuity from the periosteum to, and including the skin.
2. Violence necessary to produce a compound fracture of the bone of an extremity must be very great; hence the traumatism is extensive. Commonly the bone is comminuted and the laceration of the soft tissues very severe.
3. Compound fractures are practically always infected wounds.
4. The management of these injuries must include the treatment of a fractured bone and the treatment of a more or less extensive infected lacerated wound of the soft tissues of the same area.

An examination of 2,089 fractures admitted into St. Luke's Hospital shows that 800 of these fractures were compound. In regions where large manufacturing establishments are located, and also where railroads are many and active, the relative frequency of compound fractures to all fractures is therefore 1:2.6, or 38 per cent. of the fractures.

The management of compound fractures of the extremities must resolve itself into two general considerations, namely, (1) the treatment of the general condition of the patient brought about by the injury; (2) the treatment of the injury itself.

A patient's reaction to these severe traumatisms depends on many individual peculiarities, on his environment and on the circumstances of the injury. Individual resistances to psychic shock, to "anoci-association," to loss of blood, must all enter into consideration. The horrors of a severe railroad or factory wreck and the conditions of the locale of the accident have also their effect. In short, a compound fracture, as every other disease or injury does, varies in every case, and should be treated as individual. The treatment must be adapted to the circumstances of each case, not the case adapted to any set method of procedure. This I consider a most important matter and I try to emphasize it on all occasions.

FIRST AID

The intelligence and skill of a practitioner in many instances, will be taxed to the utmost to meet the necessities of first-aid treatment of compound fractures. One cannot too much emphasize the importance of the proper initial treatment of these injuries. As I have said so often, the fate of the limb and perhaps the life of the patient depend on the manner of the first aid.

First, the general condition of the patient must be gauged as accurately and rapidly as possible. Stimulants may be necessary and should be used (alcohol is not a stimulant and should not be given). An analgesic should be given; as a rule, morphin, in full dose, combined with a small dose of atropin and given hypodermatically, I think, is the best. The control of hemorrhage should be sedulously sought. If practicable to avoid it, a tourniquet of any kind should not be used to control hemorrhage in these cases. If nothing else avails and a tourniquet must be used it ought to be applied some distance away from the seat of fracture. In cases of compound fractures of the bones of the legs, for instance, the tourniquet should be applied to the lower third of the thigh, or if of the bones of the forearm, to the lower third of the arm. An elastic constrictor is best and much safer.

Hemorrhage may as a rule be controlled and at the same time another indication, namely, protecting the wound, may be carried out, by packing the open wound with sterile gauze or any sterile fabric, placing thick compresses of sterile cotton wool or any other clean material over the wound and bandaging it firmly in place, from the extremity, over the wound, and to at least six inches above the fracture. Great care must be used to prevent any further soiling of the wound. No effort should be made to "set the bones," and in no case should a projecting end or fragment of bone be allowed to recede under the skin, unless means are at hand of making adjustment and proper fixation of the bones and limb, and unless the projecting bone and the edges of the external wound have been carefully cleansed and disinfected beforehand. Death has often resulted from the infection occasioned by unnecessary manipulation of a wound without previous sterilization of the hands. Never should a finger be thrust into any wound unless the finger and the wound have been previously cleansed and sterilized.

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* *Read by invitation before the New York State Medical Society.*

Careful fixation "in the position assumed by the injured limb" should be employed, unless it is clear that the ends of the fragments are where they will surely do more damage unless their position is changed. The patient should then be transported where he may receive proper permanent dressing and such treatment as his case will require.

The surgeon should try to determine at the very beginning of his responsible management of every case of compound fracture, the following points:

I. What will be the best treatment of this particular injury, considering: (1) the individuality and the physical condition of the patient; (2) the environment of the patient; (3) the actual condition of the injured member.

II. What method of treatment or operation will most likely result in the shortest time of disability of the patient and give him afterward the best functional result?

PERMANENT TREATMENT: I. SPECIAL CONSIDERATIONS

1. *Individuality of the Patient.*—Before everything else I would place the consideration of the patient himself. That is to say, I would learn, if possible, not only the actual physical condition of the patient ith regard to the tolerance of the trauma, its effects id the extent and degree of the local injury, but also is habits, his temperamental peculiarities and his gen-al health and resistance. Obviously, it would be ighly improper to treat an exhausted patient, or a ery old person, or a very young child, or a diseased and weak individual, as one would treat a vigorous adult in prime condition.

Thus, after assuring himself that hemorrhage has been thoroughly controlled and that the patient's suffering has been relieved as far as practicable, the surgeon should at once make a thorough physical examination of the patient. He should carefully note all organic lesions, indications of dyscrasias, improper or delayed development, or signs of marked senility. The blood-pressure should always be taken. The immediate subsequent procedures should be determined by this physical examination.

If the patient is in a condition of exhaustion from psychic shock, loss of blood, or "anoci-association," or if his blood-pressure is very low, all extensive and tedious manipulations and operations must be delayed. If he is very old, a long operation with continued anesthesia will be dangerous. Also any method of treatment which will require long confinement to bed should be avoided. Bone repair in most dyscrasic individuals is very slow and always uncertain. Methods must be varied and adapted to meet the indications of the patient's condition.

2. *Environment of the Patient.*—The surroundings of the patient will have a very important bearing on the treatment to be employed. When at all practicable, a serious compound-fracture case should be treated in a first-class hospital. It is as a rule far better for the patient to endure the hardship of a one- or two-hour journey in order to reach a hospital than to be subjected to the discomforts and deprivations he would have if he were treated at his home, unless he were very rich. A surgeon is sadly handicapped in trying to treat such cases outside of a well-equipped hospital.

3. *The Actual Condition of the Injured Member.*—As was said in the beginning, a compound fracture is always a complicated injury of very grave severity, and is practically always an infected wound. One must always bear this last fact in mind and treat the case with a full recognition of the importance of thorough cleansing and disinfection of the wound, and especially of thorough drainage.

General anesthesia is usually necessary for the proper examination, handling and dressing of a compound fracture of one of the principal long bones. This is particularly desirable, not so much for the relaxing effect, as to obviate the dreadful pain of the examination and fixation. Compound fractures when not comminuted are much easier to reduce and fix in place than simple fractures.

There is one point in regard to cleansing and disinfecting the injured parts I wish to note, that is, the great value of tincture of iodin for its rapid and very efficient action in disinfecting soiled skin and wounds. One must remember that iodin is of little use over skin which is moist and sodden. In such conditions it will not penetrate but will blister. The surface of the skin to which iodin is applied for disinfecting purposes should be dry. Therefore cleanse the skin of the limb about the wound with benzin, ether or turpentine, and alcohol, then dry carefully and paint it with the tincture of iodin.

Every compound-fracture case will require some operative procedure. In rare instances measures for proper drainage only will be necessary; but in most instances much more will be required.

One must decide at the time of the first permanent dressing:

1. Can the limb be saved?
2. If saved, will the limb be left in a condition for practical use?
3. Will it be best for this patient to run the possible risk of his life, endure a period of long disability, have probably a permanently disabled limb, or will it be best to amputate and thus practically assure his life and shorten the time of his disability by at least one quarter?

1. *Conditions Determining Amputation rather than Attempts at Conservation.*—*A.* If the skin has been so crushed or lacerated that it is evident that at least three-quarters of the periphery over the fracture will slough, and the muscles beneath are badly lacerated or comminuted, amputation will be inevitable.

B. If there has been a circular or annular destructive pressure on the whole periphery of the limb, at the site of fracture or very near it, amputation will be necessary.

C. If in a case of compound fracture with a serious annular laceration of the skin the subjacent muscles are badly comminuted, it will be best to amputate.

D. If the injury has been produced by tremendous pressure, as of a car-wheel or heavy pillars of iron or steel, the limb may have the skin of its whole periphery, or nearly all of it killed but not divided, but the muscles beneath will be torn across and the bone comminuted. Such injuries require amputation.

E. If the main blood-vessels are torn across in the irregularly jagged way common in these injuries, amputation will be necessary. I do not think anastomoses or transplants of blood-vessels will succeed in this class of injuries. The laceration of one of the chief vessels when there are two in an extremity does not necessitate amputation. The large nerve trunks will stand much more injury than blood-vessels and may successfully be sutured, unless a long segment of the nerve be destroyed.

F. If the bone or bones are comminuted so that the fragments are loose and deprived of periosteum, requiring the loss of as much as 6 cm. (3 inches) of the shaft, this, together with the lacerations of muscles and skin always present in such cases, will require amputation.

2. *Probable Final Condition of the Limb.*—This is a very important matter and might profitably be considered with the third condition, namely, the best thing for the individual patient. Undoubtedly limbs might be saved which would be quite useless and sometimes positively in the way afterward. Again, for some persons even a useless limb might be considered best if it could be left in a painless condition. A man who has to earn his living by activity and manual labor should be placed in a different category from a man whose livelihood depends on sedentary work requiring very little or no activity. Also for some persons the long confinement and disability resulting from the treatment of a serious compound fracture might be so irksome and indeed disastrous that they might prefer an amputation, and this would be best.

With regard to the danger to life there is no question that conservation is much more hazardous. Analysis shows that in 8.8 per cent. of the cases of compound fractures treated conservatively, the patients died. The average mortality after single major amputation is but 4.54 per cent. The average disability from compound fractures of the femur and both bones of the leg is thirteen months. That of amputation is not quite five months. Of course, this means that the patient may get about, and through the use of an artificial limb may return to a life of comparative activity and much usefulness, though rarely will he be able to return to his former occupation, if it were a laborious one.

Having decided to attempt conservative treatment of the extremity, the first consideration should be to cleanse the wound and surrounding skin. Disinfection (sterilization) of skin and wound should be done thoroughly, especially the ends of the fragments if one or more has penetrated through the skin. Some extension apparatus, such as the Lemon or Lambotte extension bar, is very useful in these cases. Reduction is usually not difficult, on account of the facts that one may see or directly feel the ends of the fragments and guide them by forceps or some kind of lever, and that the muscles are usually so badly lacerated that they do not offer the resistance which is nearly always present in cases of simple fractures.

The fingers should be kept out of the wound as much as possible. I think there can be no doubt that infection is most apt to occur from finger manipulation in the wounds. By a little practice and experience one will learn to perform all the necessary manipulations with the aid of instruments.

Frequently the wound made by the injury, by a little extension or direction, may be used as a way of approach to the bone. The muscles usually are so much lacerated that an incision of the skin and fascia only is necessary. In short, the injury has frequently prepared a way to the bone and if any further incision is necessary it may be so made as to assist in another cardinal object, namely, drainage. One objection to the open method of treating fractures of the long bones of the extremities, that is, the necessary wound, has in compound fractures been removed by the traumatic opening of the tissues.

Direct fixation of the fragments is nearly always best. A rigid splint or plate applied directly to the bone is better than wiring the fragments. In selected cases a nail or nails may be used. I cannot understand the objections and warnings of some otherwise very up-to-date and experienced surgeons against the use of plates in compound fracture cases. My experience and conviction have always been that these are the very cases which demand plates. No valid objection can be offered to sterile fixation instruments unless they in some way harm the fragments. If a proper plate is used in the proper manner it does not injure the bone.

Even if the wound cannot be thoroughly sterilized (and it is exceedingly difficult to do this), suppuration and the evils of infection are diminished locally by a proper metallic plate. Researches at Johns Hopkins Hospital over twenty years ago proved the inhibiting influence of many metals on bacterial growth. Iron and steel are not thus active, as they oxidize too readily, but silver, copper and nickel and their alloys are active inhibitors.

Since 1886 I have used a plate made of Wessel silver, and I have used Wessel silver pegs for many years to fasten this plate to the fragments. I am sure this plate has always seemed to exercise a beneficent effect in compound fractures even with active suppuration present. Besides, fixation relieves pain and further injury which might be caused by the excursions of the ends of the unfixed fragments. After fixing the ends of the fragments one must decide about suturing the lacerated soft tissues. As was said before, blood-vessels are injured in such a way in compound fractures that not only are long stretches absolutely destroyed, but the vasa vasorum are thrombosed for some distance on either side of the evidently destroyed area. The vessel-walls will not bear tension or constriction. I think, therefore, that vascular anastomoses and implantations cannot be used. This is all the more true because these cases are always infected more or less, and vascular anastomoses do not succeed except in sterile fields. Arteries and large veins, therefore, should be ligated and not sutured. Divided nerve-trunks may be successfully sutured in these cases and this should be done when necessary. Tendons and muscles may also be sutured, but not when they would seriously impede or block proper drainage. The lacerated fascia and skin should be pared along the margin of the original wound and then be closed with interrupted sutures, sufficiently close to prevent gaping of the wound, but not so as to interfere with free drainage.

Drainage is all important. There will have been very considerable hemorrhage. In very painful lacerated wounds the muscular coats of the local arteries are usually in a condition of almost tetanic spasm. Relief of the pain and complete rest of the limb will be followed by relaxation of the arteries; the result will be that small vessels not perceived during the operation will bleed after the wound is closed. Considerable oozing will always occur. In addition to the oozing blood the opened lymph-spaces will pour out quantities of serum. All this fluid should be released and drained out of the wound. Unless this is done, disaster will almost surely occur. The reasons for this are so well known it is not necessary to go further into this.

A very important point with regard to drainage is that it should always be done in such a way and the drains so placed as to avoid all tension and harmful pressure in the wound. This is particularly important when the skin has been torn from the fascia and turned back as a flap, or raised up by a large effusion of blood. Most of the blood-supply has been cut off from the skin in such cases, and any pressure or much tension on the skin will cause a slough. Multiple incisions should be made through the skin and drainage by canalization (without the use of any drain material) should be employed. The incision should be so placed as to assist in relieving tension.

Thus, the bone having been fixed, the lacerated soft tissues sutured, the wound closed and proper drainage provided, a masse dressing of dry, sterile, absorbent material should be applied with fairly firm pressure, and over all a gypsum splint with strips of flexible wood or light metallic strips worked into it, should be molded, and so placed as to give support and some elasticity to the dressing. If all goes well the dressing may remain on for three weeks, then be changed and a similar one applied. Usually all drainage-tubes and gauze packs may be removed and left out at this first dressing. Also it is my custom at this dressing to remove the pegs which hold the plate, unless it be a fracture of the femur. If the wound has not closed over it the plate may also be removed. If the plate is well enclosed and buried by union of the flaps no effort should be made to remove it. As was said before, the plate does not cause any irritation if allowed to remain; on the contrary it seems to inhibit bacterial growth and hastens union of the wound.

PERMANENT TREATMENT: II. AS TO RESULTS

What method of treatment or operation will most likely result in the shortest disability of the patient and give him the best functional result? This determination is meant to apply only when conservative treatment is to be attempted. The indications for amputation have already been given. The question resolves itself therefore, practically, as it is intended to apply it in this instance, into: Will it be best to use direct fixation to the fragments, if so, what kind?

I have recently analyzed fifty-one cases of compound fractures treated in my clinic in St. Luke's Hospital. These cases are taken from the records of the last five years and represent the cases which could be traced and the final results definitely determined. They represent the following classes of compound fractures.

Femur	8 cases
Tibia and fibula	15 cases
Tibia alone	10 cases
Patella	2 cases
Metatarsal bones	2 cases
Humerus	4 cases
Radius and ulna	7 cases
Radius alone	1 case
Ulna alone	1 case
Humerus, radius and ulna	1 case
Total	51

Direct fixation of the fragments was made in 35 cases, of which 28 were plated and 7 were wired. In 13 cases external fixation only was used; 3 patients were moribund when admitted and died within a few hours after admission. (No special treatment and not enumerated further.)

The cases in which plating was done were the following:

Femur	7 cases
Tibia and fibula	12 cases
Tibia	5 cases
Humerus	4 cases
Total	28

The cases in which wiring was done were the following:

Tibia and fibula	2 cases
Radius and ulna	3 cases
Humerus, radius and ulna	1 case
Patella	1 case
Total	7

The external fixation apparatus was practically the same in all the cases, namely, a reinforced gypsum splint carefully molded over a large masse dressing of sterile gauze and cotton wool. The average length in days of confinement in bed in the various injuries was:

Forearm cases	6 days
Humerus cases	11 days
Leg cases	28 days
Femur cases	38 days

The average time in days spent in the hospital in the various injuries was:

Forearm cases	23 days
Humerus cases	48 days
Leg cases	53 days
Femur cases	69 days

The average length of time the patient was away from work, that is, until he returned to his occupation, was six months in leg fractures and thirteen months in fractures of the femur. For fractures of the upper extremity the time of disability has not yet been thoroughly worked out, but it appears to be about four months. All except three of the patients who had direct fixation were operated on within forty-eight hours. Two cases of compound fracture of both bones of the leg were plated on the fifteenth and eighteenth day after injury respectively, because the fragments could not be kept in place. The case of compound fracture of the humerus and both bones of the forearm was wired on the tenth day after injury, also because by other means the fragments could not be kept in apposition.

Though compound fractures should always be regarded as infected wounds, it is noteworthy that it is recorded of these cases that suppuration occurred in only two of those which were fixed by direct application to the bones. One patient with compound fracture of the femur, plated, had a streptococcic infection, but made a good recovery; one patient with compound fracture of the humerus, radius and ulna, wired, had suppuration from a mixed infection, but also made a good recovery. Not one of the patients in the direct fixation cases died.

RESULTS

In the forty-eight cases treated, there were two deaths, both from septicemia. In one case of compound comminuted fracture of the femur with very extensive injuries to the soft tissues, amputation should have been done, but the patient refused amputation and died on the fourth day from acute sepsis. The other case was one of prolonged septicemia from a mixed infection in a man who had a compound fracture of both bones of the leg, for which no direct fixation was done. The mortality was 4.16 per cent.

One patient with compound comminuted fracture of the bones of the leg with dislocation of the ankle-joint had a mixed infection; destruction of the joint and tarsus followed and an amputation became necessary. All but one of the forty-six patients who left the hospital had useful limbs, that is, the one previously noted on whom amputation was done. Of these patients, 40.32 per cent. have returned to their former work and report that they notice no disability.

Roentgenograms which were taken show the conditions of the bones during and after recovery. Roentgenograms in cases of compound fractures are taken (1) after the first permanent dressing; (2) after the fixation plates have been removed; (3) when the union seems complete; (4) after the patient has returned to his occupation.

The number of cases is too small for any set conclusion with regard to the treatment of compound fractures, but certainly in this small series direct fixation has produced much quicker recoveries and far better results than the former conservative methods. It will be noted that not one of the thirty-five patients in whom direct fixation was applied to the fragments died. They all made good recoveries. In the smaller number of cases (thirteen) in which the fragments were not fixed by direct splints on the bones (three hopeless cases are not considered in this reckoning), two patients died of sepsis.

Roentgenograms show that fragments which have been plated together remain in better adjustment than those which have been wired, and the anatomic results are better, except in cases of fracture of the patella There is less pain after the use of plates than when wire is used, and union results more quickly. It seems, therefore, that compound fractures of the long bones are best treated by rigid splints applied directly to the bones. I believe that the Lane plates are not the best for these cases, however. Experience of other surgeons has shown that in cases of compound fractures the Lane plate must nearly always be removed. Usually it is difficult to get at the screws and then it becomes necessary to use a general anesthetic and to make a considerable additional wound in order to remove this plate; whereas a plate fastened by pegs which project through the skin may be released simply by withdrawing the pegs, and if it is necessary to remove the plate this may be done simply by utilizing one or two of the punctures remaining after the peg has been removed, which requires no anesthesia.

A further consideration is the time of disability. My cases show that the average time of disability for compound fractures below the knee was six months and for those above the knee, namely, fractures of the femur, thirteen months. The use of plates thus shortens the time of disability in leg cases by about four months and of the thigh cases, five months. Of the patients, 40.32 per cent. are known to have been able to resume their former occupations. No doubt a number of others were likewise able to do this, but I could find only this number after a year or more from the time their treatment was ended.

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THE ROUTINE TREATMENT OF PUERPERAL SEPSIS

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It is obvious that not every case of fever in the puerperium is of septic origin. Engorgement of the breasts, constipation, nervous perturbation, malaria, syphilis typhoid and other adynamic fevers are some of the many causes of fever entirely separate and distinct from sepsis due to bacterial invasion. It must also be remembered that there are two distinct varieties of sepsis: sapremia due to saprophytic infection and putrefaction of pieces of placenta, membranes, decidua or blood-clot in the uterine cavity, and septicemia due to actual bacterial invasion, most often streptococcic, of the endometrium and adjacent structures, frequently invading directly the blood-current and by far the most dangerous variety.

Sapremia answers promptly to a single evacuation of the uterus and disinfection of the genital canal, with possibly a few supplementary daily intra-uterine douches. Septicemia means a long, hard fight, not infrequently a losing one, against many complications.

It is not my purpose to discuss the various means by which bacteria can be introduced into the genital canal of a parturient patient, except in one particular. One of the causes spoken of is auto-infection, in which the germs are already present, and no one, except the patient herself, is responsible. This is a comforting thought, but merely means that she is suffering from one infection (gonorrheal, for instance) which reduces her resisting power to a supplementary infection by any pathogenic micro-organisms which may be in the lochia, and is really not auto-infection at all.

DIAGNOSIS

The diagnosis of sapremia is easy. There is a moderate fever, considerable subinvolution of the uterus and a foul brown or brownish-red discharge. A single evacuation and disinfection of the uterine cavity is usually sufficient.

The diagnosis of septicemia is not so easy, in its early stages. The general symptoms are chills, rapidly rising temperature, rising pulse-rate and a physical depression often out of all proportion to the other symptoms.

The local symptoms, on which the diagnosis usually rests, are a foul discharge (though this symptom may be entirely absent), reddened and edematous labia, a false membrane formation and a subinvoluted, boggy, tender uterus. Pelvic exudate is not often an early symptom, though common enough in the later stages. In doubtful cases, certain methods of precision may be employed as aids in diagnosis. Leukocyte-counts will usually be higher than in any other form of fever in the puerperium, but in some of the worst cases a low count, showing poor resistance, will be obtained. Cultures taken from the uterine cavity, by the Doederlein tube, or cultures directly from the blood-current, are often valuable aids, but unless they are taken with the strictest aseptic technic, and submitted to a competent bacteriologist with adequate facilities for their culture and diagnosis, they become the reverse of precise.

PREVENTION

The preventive treatment of sepsis may be summed up in two words: surgical cleanliness. The nearer an obstetric case is handled like a major surgical one, the less will be the danger of infection.

The patient's room should be sunny and well ventilated. The patient herself should take a bath at the onset of labor and empty the lower bowel by an enema, and the pubic hair should be shaved or at least clipped close. The bed should be made fresh and adequately protected by pads (preferably of nursery cloth, which can be boiled and dried). The water should be boiled for half an hour at least, and trust should not be placed in antiseptic solutions. Instruments should be boiled, or if injured by boiling, soaked for at least an hour in 1:1,000 mercuric chlorid or 1:20 phenol (carbolic acid) solution, being previously wrapped in gauze or a towel. Bougies, for instance, unless wrapped, will float on the surface.

The sterilization of sheets, gauze, towels and cotton is often a matter of some difficulty. If access to a hospital sterilizer can be had, steam under pressure in an autoclave is the most efficient. A Rochester portable steam sterilizer is quite satisfactory, however. but the time-honored custom of baking in the kitchen stove is a delusion and a snare. Unless the materials are so charred as practically to disintegrate, they are not sterile. and when so charred they are of course useless. The gauze and cotton commercially prepared in glass jars have always proved satisfactory. That in cardboard cartons is open to suspicion. For sheets and towels a safe method of procedure is to have them freshly washed and then ironed with an iron not quite hot enough to scorch them.

The physician should scrub his hands just as carefully as if about to operate, and in addition should wear a sterile suit, or at least a gown, and boiled rubber gloves. It has been proved many times that parturient patients are more subject to infection by the exanthems than at other times, so the care of these patients and obstetric ones do not go together.

The nurse is governed by the same general rules as the physician, being scrupulously clean in the handling of the patient and her pads, etc. The so-called practical nurse on whom we must so often depend is a problem. Her intentions are of the best, but her execution is bad. If one can be found who does not have an ineradicable desire to test the temperature of water by wiggling her fingers in it; who does not keep the patient's pads in an open pasteboard box under the bed, or who is without a habit of impressing into service as a pad every piece of cloth she can find, before it is thrown away as useless, that one is the exception and as such a jewel beyond price.

TREATMENT

The first step in the curative treatment of septicemia is the local disinfection of the genital canal, commonly but erroneously spoken of as curettage — an operation more abused than any single one in obstetrics. It is indicated in nearly every case, and properly done, is productive of much good — improperly done, it may be homicidal.

The patient is placed on a table (an ordinary kitchen-table answers the purpose very well) and not in her bed, as remaining in bed adds greatly to the difficulty. An anesthetic is not necessary. The vulva and vagina are carefully cleansed with cotton and tincture of green soap and sterile water, followed by a douche of 1:4,000 mercuric chlorid solution.

The anterior lip of the cervix is caught by a double tenaculum and pulled down. This straightens the axis of the uterus, makes access to its cavity easier and lessens the danger of perforation of the posterior wall. The uterine cavity is then irrigated through a two-way catheter, and an Emmett curettement forceps is inserted and any masses of tissue contained in the cavity or hanging like stalactities from its walls are removed. The instrument usually sold under the name of placental forceps makes a first-class club, but as a surgical instrument it has its limitations. It is much too long, heavy and clumsy. If any curetting at all is done, a dull, broad-bladed curet should be used, and not a sharp one, and under no circumstances should any force be used. The so-called placental augers are outrageous instruments and should never be used. In the vast majority of cases complete evacuation can be secured by the placental forceps alone, and any curetting is unnecessary. The proper type of placental forceps is much more effective than the finger, and should be used in preference. When the operator is satisfied that the cavity is empty, a second intra-uterine douche is given, and the uterine cavity is not packed unless there is bleeding sufficient to warrant it.

Should the temperature not subside, or having subsided rise again, there is no need or justification for a second evacuation or, to use the abused term, curettage of the uterine cavity. Intra-uterine douching alone is advisable, and the best solution for this douche is one of tincture of iodin 2 drams, 95 per cent. alcohol 8 ounces, and sterile water sufficient to make two quarts. This douche given once daily is sufficient. Nothing is gained by douching more frequently. It is needless to add that the two-way catheter should have ample provision for return flow, to prevent any fluid passing out through the fallopian tubes.

To the form of treatment just described there is only one contra-indication — phlebitis; but as it is impossible to know in the early stages that the pelvic veins are infected and to be sure that the uterine cavity is empty, the lesser of two risks is taken by proceeding with the disinfection. Should, however, a sharp rise of temperature follow the disinfection, no further local treatment, even an intra-uterine douche, should be countenanced.

The routine use of vaginal or uterine douches, in the absence of symptoms justifying their use, and purely as a preventive of infection, is not to be recommended. The douches destroy Doederlein's bacilli, normally resident in the vagina, and by thus preventing the action of the acid vaginal secretion, remove one of the dependable barriers to infection.

In the general treatment the diet is of great importance. An easily digested, largely liquid diet should be given in quantities as great as the patient can assimilate. Alcohol should be given to the point of tolerance, from 8 to 10 ounces of whisky a day being not an unusual dose.

Stimulants are often required, as indicated by the heart-action. A patient with a pulse of under 110 does not ordinarily require stimulation. If it passes this limit, digitalin and strychnin are the most reliable drugs to be used. Artificial leukocytosis, theoretically beneficial, can be produced in one of several ways, as by hypodermic injection of 2 drams of 2 per cent.

watery nuclein solution twice daily, or the formation of a fixation abscess.

The latter recommendation is based on the fact that if a general infection becomes localized, improvement frequently results. Two drams of turpentine injected under the skin of the abdominal wall will produce an abscess which is all that can be desired. What success this treatment has had is probably due to an increase of leukocytes, but my results with it have not made me enthusiastic as to its advantages over less painful methods.

Hypodermoclysis or enteroclysis, on the principle of increasing the body-fluids and washing the blood, are worth a trial but not too much to be depended on. Enteroclysis seems to give as good results as hypodermoclysis, and is much more convenient. Two quarts of salt or sugar (1 dram to the pint) solution are given at a time.

The use of serums and bacterins is at present the subject of as much discussion as any single point in the treatment of sepsis. When the serum was first marketed it was hailed as a specific cure; too much was expected of it and naturally the results were disappointing. This much we have found as to its availability: When it is given early and in sufficient doses, beneficial and sometimes brilliant results can be expected. When it is given late, the results are disappointing. The minimum dose is 80 c.c., given hypodermically every six hours; 100 c.c. is better, but the small doses of 10 or 20 c.c. are waste of time and material. The serum must be fresh, and it will not stand transportation for great distances. It is an expensive form of treatment, because of the large doses required. In desperate cases it can be given intravenously, and by this method I have secured immediate improvement in a case when the hypodermic method of administration for forty-eight hours had produced no effect whatever. I have not seen anaphylaxis from these large doses, or any other untoward effects. Occasionally patients seem benefited by the injection, in addition to the antistreptococcic serum, of from 5 to 7 ounces of normal human blood-serum, secured from a healthy donor, once daily. This is worth trying when the results from the antistreptococcic serum have not been satisfactory. Much of the criticism against the use of serum has been based on insufficient dosage and late administration, either or both. When it is given in doses of from 320 to 400 c.c. in twenty-four hours, it is a valuable aid in the treatment of sepsis, though it cannot be hailed as a cure for sepsis *per se*.

The use of bacterins has not been so satisfactory even as the serum. They are chiefly indicated in localized infections, and are nearly if not quite useless in the general blood-current infection. The best results have been obtained in gonorrheal arthritis complicating the puerperium. Here again large doses, from 250 to 500 million or more, must be used, and either autogenous or polyvalent cultures may be employed.

Colloidal silver has been largely used abroad, but is of doubtful utility. It can be used as an inunction of from 5 to 10 per cent. argyrol ointment, or the intravenous injection of from 3 to 5 c.c. of a 2 per cent. collargol solution, repeated at twenty-four-hour intervals for three or four doses. The inunctions, though they may not prove beneficial, are at least harmless; the same cannot be said for the intravenous injections, as alarming collapse has followed their use. There is still a great deal of doubt as to the favorable action of either plan.

There is no purpose in this paper of discussing the surgical treatment or the complications of puerperal sepsis, with one exception (phlegmasia alba dolens), as this falls more in the line of specialism and hospital treatment. Every physician should, however, be familiar with the indications requiring abdominal section, in a case of sepsis. Briefly stated, continued septic symptoms, plus the development of an abdominal mass, palpable above the symphysis or Poupart's ligament, demand surgical interference. Infiltration of the bases of the broad ligaments does not require abdominal section, as 90 per cent. of these cases undergo spontaneous resolution, and the rest can be opened, if needed, through Douglas' pouch. The explanation of this abdominal mass is found to be almost always a cornual abscess, pointing toward the peritoneum. I wish to emphasize the advisability of operation for these cases. I am aware that in many places surgical intervention is deprecated, as these cases are said to be hopeless. Without operation they are indeed doomed, as the abscess will rupture into the peritoneal cavity. With operation and proper drainage (which is the main factor in success), 90 per cent. of them can be saved. In the last ten years, at the Maternity of the University of Pennsylvania, the mortality in 165 of these operations was fifteen, or 9.6 per cent., and this in a class of cases that without operation are hopeless. Rapidity of operation, removal of only what is diseased, putting in only enough ligatures to stop the bleeding, leaving the broad ligaments gape, drainage by a glass tube in Douglas' pouch out through the lower end of the abdominal incision, with the pelvis packed full of gauze and the end of the gauze emerging alongside the glass tube, and active stimulation are the factors influencing success. The glass tube is sucked out every twenty-four hours and removed in five days; the gauze is slowly removed over the next five days, and the sinus then drained by a rubber tube. Vaginal drainage is useless in these cases and will reverse the mortality figures. The whole subject of the surgical treatment of puerperal sepsis is a most complicated one and it is not my purpose to touch on it further in this paper.

The commonest complication which the general practitioner meets is phlegmasia alba dolens, or milk-leg, and because of its relative frequency deserves some discussion. It begins late, from ten to thirty days post partum, with pain in the calf, usually the left, and some swelling. A moderate fever lasts for a short time, and the swelling extends until the whole lower leg and not infrequently the thigh are greatly increased in size. The vein can often be felt as a tender cord down the inner surface of the thigh.

Treatment consists in elevation, applications of equal parts of lead-water and alcohol, painting ichthyol over the course of the vein, or application of a saturated solution of magnesium sulphate, and the patient must be kept as quiet as possible, in bed, until the temperature has been uninterruptedly normal for at least ten days. The greatest danger is pulmonary embolism, and prognosis must therefore be guarded. The danger of embolism is greatly increased by too early activity or by massage, which should never be used. Often considerable stimulation is required, as the disease is depressing and asthenic in tendency.

A much rarer form is cellulitis of the thigh, which tends to suppuration of the connective tissue, and is treated like cellulitis in any other part of the body.

Abscesses in the phlebitic variety are not unknown, occurring most often in the popliteal space, but it is the tendency to embolism that must make our prognosis guarded, and make us forbid the patient to leave her bed until the fever and local tenderness have entirely subsided, and limit her activities, when up, until the swelling has practically disappeared.

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THE PSYCHANALYST AND THE COMMUNITY *

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In the midst of the current discussion of psychanalysis, many aspects of the psychanalytic trend have been brought into view. The aspect, however, which to me seems by far the most vital but which has as yet received the least consideration is the relation of psychanalysis, and therefore of the psychanalyst, to the community.

There still persists, not alone in the lay, but also, unfortunately, in the medical mind, a wide-spread misapprehension in regard to the larger social and ethical implications of psychanalysis. It cannot be said that this misapprehension is due altogether to the mistaken interpretation of the dissenters; to a large extent it is due to the tendency of certain of the accepted adherents of the Freudian school of psychology. But wherever the blame should be placed for this misconception of the position of psychanalysis in relation to the ethical values of the community, it seems to me that it should now be the privilege, if not the obligation, of the psychanalyst to make clear the significance of his position to the body social, and to state in no disputable terms on what grounds he bases it.

The sphere of the psychanalyst is restricted for the most part to the study and relief of disorders embraced under the unhappy designation of functional nervous diseases or psychic disorders. It is, of course, justly acknowledged that the psychic equation of a patient enters more or less within the reckoning of every physician. Certainly it pertains conspicuously to the province of the specialist in nervous diseases — the neurologist, the medical psychologist. What is of momentous significance, however, in a comparison between the positions of these general trends of psychotherapy and the specific trend of Freud, is the wide difference in their fundamental method of procedure as determined by the essential disparity of the basic conceptions underlying these differing schools.

Of the numerous measures which human ingenuity has devised for successfully coping with nervous disorders, the aim hitherto of all of them has been essentially a remedial aim, that is to say the removal of discomfort. Relief, alleviation, cure is the exclusive idea. The underlying purpose of the conventional therapeutic regimen is conciliation, concession, propitiation. Thus, of the general schools of psychotherapy, the central idea is ease, palliation, support. The condition being one of discomfort, it must be replaced by one of comfort; and as the primary remedial object is easement, this must be sought with a view to the minimum incommodity to the patient. Hence conspicuous features of the more popular psychotherapeutic equipment are a quiet and remote domicile, conditions of isolation, rest in bed, attendant nurses, soporifics, and incidentally an occasional visit from the physician whose chief resources consist of a persuasive optimism combined with a gentle sympathy and a tactful evasion of aught that might in the least savor of unpleasantness to the patient.

I do not wish to disparage such a method. It possesses an undoubted therapeutic value. But whatever its remedial virtue, the fact is not to be blinked that, in the main, the method is designed with a view to the delectation of the patient. It is largely a program of concession. It is parleying and indirect. It temporizes and conforms, is diplomatic, cautious. It is a program that is encumbered with considerations of etiquette, rather than a direct and untrammeled scientific approach to the understanding and adjustment of the disorders at which it aims. The physician makes no real demand on the patient, but on the contrary directs all his ingenuity toward making him comfortable; thus the aid which a patient receives through such a mode of treatment is to a large extent rendered him on his own terms.

The position of the psychanalyst demands a directly contrary course of procedure. Here the situation admits of no compromise, no evasion, no attitude of indulgence. The policy of the psychanalyst is a robust one, and he outlines it without mitigation or cavil. Simply and directly, however considerately, he explains to the patient the psychologic meaning of his disorder in accordance with the psychanalytic interpretation, and informs him of the bearing of faulty mental habits and adaptations on the causation of nervous processes. The physician explains the essential disharmony at the root of these disorders; the irreconcilability of contending mental and emotional influences within the personality, pointing out the inherent conflict thus embodied in neurotic disorders. He further explains that a true adjustment may be made only through an honest recognition of the vital unconscious trends with which his personality is now blindly and inadequately contending. At the same time he frankly tells the patient that the process through which the requisite adjustment is to be made entails difficulty, discomfort and personal sacrifice on his part, and he does not disguise from the patient *his* responsibility in this effort of readjustment.

While not unsympathetic to the suffering of his patient, the psychanalyst makes clear that his is no maudlin or sentimental sympathy, such as would surround the patient with the soft and ineffective ministrations of external attentions, but that his sympathy is virile and adult and allied to what there is within the man of courage and honest purpose. And so the psychanalyst makes clear his position that for him "cure" means a thorough and unflinching acquaintance with one's innermost self, that cure is the attainment of an undistorted vision of life without regard to personal comfort or edification, and that the mind which is torn with inner doubt and discord is prepared to accept terms of peace with itself only when it has been brought to see things in their unembellished truth.

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* Read before the fifth annual meeting of the American Psychopathological Association, Albany, N. Y., May 6, 1914.

Such is the position of the psychanalyst, and from this position he does not stir.

Realizing then that the symptoms of the neurotic patient are but the social gossamers beneath which he seeks to hide his natural outline, the psychanalyst proceeds to strip away these artificial draperies and address himself to the naked inner man. This is not an easy task. It is not easy by reason of its very nature. As the symptoms of the neurosis have been devised by an ingenious unconscious as a measure of defense against the bugbear of reality, the patient will seek no less ingeniously to maintain this defense against all encroachments.

So, from the outset, it is understood that patient and physician are entering earnestly and resolutely on an endeavor involving mutual responsibility and sacrifice.

When the psychanalyst has at last divested the personality of its artificial mantle, and views the natural man; when we have stripped away the husks of pretense and have dared to look unafraid on the contour of the actual; what we find universally to be the purpose, the real motive of all this elaborate and painstaking mechanism of insincerity and disguise is an ancient and indigenous *egotism*. Egotism is the effort to see things as we would have them, rather than as they are. Egotism is therefore no respecter of truth The *wish* is its sole criterion, for egotism is allied with the unconscious, with the primary, pleasure-principle, the original phase of psychic life with its immediate, hallucinated satisfactions.[2] It is egotism which leads us to choose what is pleasant in preference to what is true. It has been wisely said, "the truth hurts." It is so much easier to be beguiled with flattery and blandishments than to subject oneself to the searching light of self-criticism.

Thus it is egotism that lures men into the rosy path of irresponsibility. To follow it, however, is to take the path that leads finally beyond the bounds of organized society toward disintegration and madness, for *insanity is nothing else than the unmeasured sway within the personality of this disorganizing principle of egotism.* A recent writer, in a penetrating essay on Cervantes' classic portrayal of the mad Don Quixote, acutely discerns this underlying motive of the hero's insane delusions. "It is", the author says, "Don Quixote's irrational determination to believe as he wants to believe, rather than as the facts warrant," that is the cause of all his madness. "As Don Quixote more and more indulges his delusions and further departs from strict intellectual and moral integrity and truth, more and more he is alienated from his kind, more and more he is a lonely figure, less and less can any one help him. There is no longer any exchange of opinions between himself and others, only his own exaggerated opinions asserted dogmatically. He resents every dispute, every assertion which differs from his own, so that by and by his companions withdraw their converse."

It is this same egotism — this obstinate "determination to see the world *as it is not*, but only as he wishes it to be" which is the besetting fallacy of the neurotic personality. We maintain, however, that while not less deep-seated and obdurate, the egotism of the neurotic individual is somehow incompatible with something better within him. He seems imbued with a finer intellectual insight, a deeper sensitiveness to life's values. Some innate truth endows him with a higher moral criticism, so that instinctively he opposes a barrier to egotism's sensuous appeal, and so the insincerity and untruth into which his native egotism has decoyed him is to such a personality wholly intolerable, and he experiences the intensest mental suffering in consequence of the moral conflict which an enforced resort to such artificial protections has occasioned him. He can no longer find satisfaction in the popular appeasements of the body-social, but becomes more and more deeply introverted, withdrawn and inhibited, until at last his life has become so crippled and confined as to be no longer livable.

This description offers a rough character-interpretation of a frequent type of neurotic personality.[3]

It is the aim of the psychanalyst to lead such a personality out of his prison of repression and ineffectiveness by means of a patient and honest study of himself With consideration and respect the psychanalyst traces one by one the causes which have led to his isolation and repression. He leads the patient to a gradual realization of the inherent egotism—the latent unconscious *wish*—that has lain back of his symbolic disguises. Thus the personality is led little by little to an ever-deepening renunciation of the immediate pleasure-satisfactions and to the gradual attainment of a correspondingly broad conscious adaptation.

Let it not be thought, however, that we can inculpate on the charge of egotism the neurotic alone. After all we are of one tissue. We have but to look about us at the so-called normal persons composing the community to see that life masquerades no less under the disguise of social make-believes than under the symbolic subterfuges of the neurotic individual. The difference is that the artifices of the social community, being collective, unite its members, so to speak, by a common language, while the neurotic isolates himself through the extravagance of his metaphors. For the usages which commonly pass current are unacceptable to him. He refuses to accept life on the terms of popular indorsement. Rejecting the criteria of the majority, he stands on a life-and-death principle, and from his self-immolating choice popular subscription cannot swerve him.

What is the difference here? What is it that thus differentiates the neurotic, in his gloominess and withdrawal, from the average good fellow with his cheery complacency? The difference is merely that the neurotic assumes a deeper disguise. His concealment is more subtle. The symbols to which he resorts possess an organic antiquity. They are esoteric, elemental. It is thus that he separates himself from his normal social congeners.

Observe, however, that the policy which leads to the neurotic's self-imposed ostracism differs only in degree from the policy of the community. For society is hysterical, too. Society too has its elaborate system of defense-mechanisms, its equivocations and metonymies, its infantile make-shifts and illusions. The difference is that society's counterfeits possess the advantage of universal currency, and so the record of its frailties is set down under the name of custom rather than of pathology. The psychanalyst well knows though that inherently the situation is the same here as with the neurotic individual. For in whatsoever way it is sought to soften the stern aspect of reality, whether through the artificial appeasements and irrationalities of the social polity, with its phantastic mythological beliefs and superstitions, or through the yet subtler assuagements of the neurotic personality with his vicarious conversions and distortions, back of it all and actuating it all is, as I have said, an inveterate and inherent egotism.

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[2] Freud, S.: Formulierungen über die zwei Prinzipien des psychischen Geschehens, Jahrb. f. psychoanalyt. u. psychopathol. Forschungen, 1911, iii, 1. Burrow, Trigant: Conscious and Unconscious Mentation from the Psycho-Analytic Viewpoint, Psychol. Bull., 1912, ix, No. 4, 154.

[3] Burrow, Trigant: Character and the Neuroses, Psychoanalytic Review, 1914, i, 121.

I have said that egotism is the more comforting course. If we would judge how much more comforting is the course of egotism, we need only reflect on the part it plays in the complex of activities which we call life. Consider for a moment to what extent the criteria by which we live are colored by egotism. Consider the part that egotism plays in our restless social, commercial and political activities. Consider to what extent the aspiration which we call religion is imbued with the egoistic hope of ultimate rewards and satisfactions.

And more tragic still, consider how often the activities we call scientific — that is, the supposedly sincere inquiry into truth — are actuated by an egotistic spirit of pride and self-assertion. Think how even here this organic and inveterate pleasure-principle asserts itself in human affairs to the detriment or undoing of honest purpose!

When we regard the deeper, more biologic aspects of human life — the interests and demands which arise from the sphere of the sex instincts and emotions — we find that here egotism is at its source, for it is one with the primary pleasure-affects in which the impulse of sex has its genesis.

Egotism is precisely the enemy of human progress against which the psychanalyst levels his aim. Under whatsoever sham egotism thinks itself most safely concealed, it is here that the psychanalyst directs his attack.

The task of the psychanalyst, therefore, is the readjustment of the neurotic patient through a process of self-elimination. It is his task to replace caprice with logic, emotion with reason, temporary satisfaction with permanent truth. The psychanalyst then takes his stand on adult characterologic ground. He recognizes that the abnegation of immediate selfhood is the highest attainment within the ethical nature of man, that the subversion of the primary, infantile pleasure-mode is the supreme renunciation.

We contend that since a great part of the beliefs and customs of the community have at heart the same underlying motive as actuates the symptoms of the neurotic patient with his organic evasions and substitutions, namely, an inherent egotism, the trend of the psychanalyst not only aids, in its reeducative influence, the individual, but also makes for a better and a healthier community. For the psychanalyst would utilize this force resident in the onward effort of mental evolution. He would direct to better uses this impulse of self-attainment which lies at the source of the manifestations which we call life, for with the attainment of consciousness the possibility is opened for converting this genetic life-force into a constructive and a purposive principle. With the gradual enlarging of consciousness it has become more and more adapted to social and ethical ends. Thus through the sublimating process of mental growth, egotism becomes diverted into self-devotion.

Life is wrought of aspiration; conduct is begotten of desire. Back of the restless energies of men there is this elemental instinct of attainment which constitutes the driving force of humanity itself—"humanity old, untruthful, deluded, wandering among a thousand cheats, clinging to outworn customs and beliefs, pretending to nobilities not its own, lending itself here, there, everywhere among a thousand falsehoods; humanity with its ineffectual virtues, its imperfect vision;" and yet for all its frailty and folly, for all its silly self-delusion and pitiful egotism, the deeper the psychanalyst applies himself to the study of human motives and to the interpretation of human life, the more clearly he discerns within this same humanity the deeper forces, making for order and continuity, which lie at the heart of life's processes.

The psychanalyst, therefore, who rightly appraises his work cannot but be deeply sensible of the honesty and the dignity of his endeavor, and of its wide social usefulness, for his efforts are allied with the forward progress of the race.

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ANEURYSM OF THE SINUS OF VALSALVA

WITH REPORT OF TWO CASES

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Although a search through the literature does not seem to substantiate the fact that aneurysm in this situation is common, it undoubtedly impresses one that the lesion is sufficiently frequent for the clinician to keep in mind.

FREQUENCY

The frequency of this aneurysm is difficult to compute accurately. Among the "special features" pointed out by Osler[1] are the statements: "It is often latent, causing sudden death by rupture into the pericardium. It is a medicolegal aneurysm met with in coroners' cases." Possibly because of this a large percentage of cases do not get into the records.

Cattell and Steele,[2] in reporting a case of aneurysm of the sinus of Valsalva, state that it is a very rare pathologic lesion, their case being the first in 2,000 necropsies. In 3,108 necropsies Bosdorff reports two. In the Middlesex Hospital Reports, containing protocols of 3,030 cases, there were two of aneurysm in this situation. Thus in 8,138 post-mortems only seven were found.

In 1840 Thurman collected twenty-two aneurysms affecting the aortic sinuses. In 1874 Durand reported twenty-two. Cattell and Steele, from whose monograph many of these data were obtained, collected twenty-one reports of cases up to 1898. I have found in the literature but seventeen cases between 1840 and 1903. It is impossible, too, to be sure whether or not some of them were not included by the authors mentioned above.

Sibbs collected 632 reports of cases of aneurysm of the arch, eighty-seven of which involved the sinuses of Valsalva. This was quite the largest percentage of occurrences found and is not generally borne out by other observers. In 120 cases of aneurysm of the arch reviewed by Cattell and Steele, only seven were found in this situation.

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[1] Osler: System of Medicine, Ed. 8, p. 851.
[2] Cattell and Steele: Tr. Philadelphia Path. Soc., 1898.

Recent literature on the subject is very meager. There is a record of but three cases between 1905 and 1912.

These data would tend to confirm the view of the infrequency of this lesion, but it is entirely possible that the record, although the best we have, is not a true index of its real occurrence.

The sinus most often affected seems to be the right anterior; this is explained by Gray by the fact that the regurgitation of the blood takes place chiefly against the anterior aspects of the vessel.

Sinusal aneurysm may terminate in one of several ways. It may rupture into the pericardium. It may rupture into one or more of the cavities of the heart, the vena cava or the pulmonary artery. Of the twenty reports of cases collected by me, in two the aneurysm perforated the right auricle, in one the left ventricle and pulmonary artry, in one the pericardium and in five the pulmonary artery.

It has been stated that rupture does not lead to immediately fatal results, but death occurs most often from fatty degeneration of the hypertrophied myocardium. The aneurysm not rarely causes a relative dilatation of the aortic ring and leads to death from cardiac failure.

ETIOLOGY

The lesion occurs according to most authorities in young adults; as Osler puts it, "most frequently among young syphilitics." Of my cases, in only eleven were ages stated; four were in the third decade, four in the fourth, one in the fifth and two in the sixth. The lesion predominates in the male. In only one case in the literature could I find a woman affected. This is rather striking in view of the fact that the two cases, a report of which follows, were in young women.

Krzywicki states that the causes of aneurysm of the Valsalvian sinus are atheroma, increased pressure affecting points of least resistance, and syphilis. Roubier and Bouget concur, but they are "certain that syphilitic aortitis presides in these ectasias." "Peacock thought that certain of these aneurysms were due to congenital malformations which observations by Devic and Savy seem to confirm."

The majority of observers, however, recognize syphilis as the most potent etiologic factor.

REPORT OF CASES

Before considering the symptoms and signs of this lesion, I would first report the two cases coming under my observation, as they illustrate fairly well the usual manifestation of this condition.

Both of these cases occurred at the Roper Hospital under the service of Dr. Robert Wilson, Jr. Both patients were young negresses, aged 17 and 26, respectively, and both showed evidences of syphilis. The cause of death in both instances was venous stasis. In the first case there was dilatation of the aortic ring; in the second, perforation into the pulmonary artery. These cases, added to those previously collected, make twenty-two in all, six of which perforated the pulmonary artery.

CASE 1.—L. W., colored girl, aged 17, was admitted to hospital, Oct. 24, 1913, complaining of cough which began in the previous summer and persisted to the present; shortness of breath, weakness, pain under left nipple and edema of feet and legs. Latter symptoms began two weeks before and grew progressively worse up to the time of entrance. Past history negative. Physical examination revealed scars over tibiae, swelling of feet and legs, hurried and difficult respiration, rapid irregular pulse, wavy pulsations over precordium, especially at base. Thrill at base was most distinct over second and third intercostal spaces on the left of the sternum. It was impossible to decide whether this thrill occurred during systole or diastole, but it probably occurred during both. Apex was displaced downward and to the left. Cardiac dulness was increased to right and left of sternum. A loud humming "saw-like" murmur was heard over precordium, but with greatest intensity in third left interspace about 2 inches from sternum. In this location the bruit was extremely loud, of a high pitched rasping quality, and distinctly to-and-fro in character. At this site could also be heard a rather sharp snap, resembling a very accentuated closure sound. Because of the irregular heart-action and the peculiar murmur, it was impossible to determine during what part of the cardiac cycle it occurred. Roentgenoscopy revealed a great hypertrophy of both chambers, especially of the right ventricle.

The patient died November 19, with gradual rupture of compensation.

Necropsy.—General anasarca. Ascites, 750 c.c. Right pleural effusion, 500 c.c. Hydropericardium, 200 c.c. Chronic mitral valvulitis with dilatation of orifice and insufficiency. Dilatation of tricuspid orifice. Chronic aortic valvulitis with contraction of leaflets, dilatation of orifice and insufficiency. Sclerosis and atheroma of aorta with dilatation of atheromatous patch in right sinus of Valsalva, producing a saccular aneurysm of the sinus large enough to admit the end of the thumb and causing further dilatation of the aortic ring. General cardiac hypertrophy with chronic interstitial myocarditis, sclerosis of coronaries, parenchymatous and fatty degeneration of myocardium with general dilatation. Chronic passive congestion in other parenchymatous organs.

CASE 2.—B. L., colored woman, aged 26, was admitted to hospital, Feb. 27, 1914. Hysterectomy had been performed one year ago. Since then patient has been well except for occasional headache and feeling of dizziness, until Jan. 1, 1914, when symptoms of present trouble appeared. These consisted of cough, feeling of fulness in chest, dyspnea and edema of ascending type. The physical findings in this case were very similar to those in the preceding one. There was a greater degree of respiratory distress, more marked edema and the pulse was regular, but the most important difference was the absence of the loud closure sound which was so well marked in Case 1.

Roentgenoscopy revealed a large heart with pronounced distention of the right side.

Necropsy.—General anasarca. Papular eruption on forehead. Scars of old ulcer on right leg. Operative cicatrix in midline of abdomen. Excess of pericardial fluid. Mitral valves thickened but sufficient; atheroma and sclerosis of aorta with dilatation of atheromatous patch in right sinus of Valsalva producing aneurysm which projects through septum into pulmonary artery, perforating by two small openings behind the corresponding pulmonary valve. The sac admits the index-finger. General dilatation and hypertrophy of heart with fatty and parenchymatous degeneration of the myocardium.

DISCUSSION

It is not always possible to explain physical signs from the point of view of pathology, but we should try to do so, that our observations may be of value in future experiences. In the first case the striking signs were the loud to-and-fro "saw-like" murmur and thrill, the cardiac hypertrophy, especially of the right ventricle, the precordial pulsations and the so-called "closure" sound. There were probably several conditions responsible for the murmur, for, besides the aneurysm, there was an aortic insufficiency and a valvulitis of the mitral orifice causing insufficiency there. The cause of the cardiac hypertrophy is therefore obvious. The closure sound was probably diastolic and due to congestion in the lesser circulation.

The murmur in Case 2, in which there was perforation, can be accounted for by the to-and-fro passage of blood during the two phases of the cardiac cycle from aorta to pulmonary artery. It is easily conceivable that the churning of the blood caused thereby would produce the thrill. The hypertrophy of the right ventricle was caused by the increased quantity of blood in the pulmonary circulation due to the leak from the aorta.

The majority of other symptoms exhibited by these patients were simply those of failing compensation. It should be recalled that death in both cases was due to the effects of the aneurysm, namely, myocardial degeneration, and not to rupture.

DIAGNOSIS

In neither case cited was the diagnosis made ante mortem. In the first the youth of the patient, the peculiar murmur, the pulsations and thrill, with the valve-sound heard loudest over the pulmonary area and the right ventricular hypertrophy shown by the Roentgen ray were strongly suggestive of patulous duct of Botalli. In fact, we did not feel that this condition could be thrown out in spite of its rarity. We felt reasonably certain that mitral stenosis was present even if there was no persistent ductus to account for part of the signs. This proved incorrect.

In the perforating case we felt that here too there was a strong possibility of mitral stenosis playing a part in the findings. This was suggested by the hypertrophied right ventricle. Aneurysm of the heart wall was considered by one of the observers because of the precordial pulsations, the thrill and murmur.

It will readily be seen that the diagnosis of aneurysm of the sinus of Valsalva, perforating or otherwise, presents almost insurmountable difficulties. In fact, I have found no case on record in which it was stated that the correct conclusion was reached ante mortem. W. F. Wade in 1861 reported a case of aneurysm of the aorta arising above the valves and perforating the pulmonary artery and right ventricle in which the diagnosis was made before death. This is the nearest approach to the condition rightly interpreted.

There are no signs particularly peculiar to the lesion. The aneurysm may remain latent until rupture. In a case reported by Ralfe the signs were increased precordial dulness, double bruit at base and a faint systolic murmur at the apex. In a case by Stokes in which the sac ruptured into the conus arteriosus of the pulmonary artery, there was a thrill over the sternum and a double murmur heard best over the left base, but heard all over the chest even by the patient himself. In F. P. Henry's case, in which the aneurysm also opened into the pulmonary artery, the signs were dulness in left infraclavicular region, pulsation and thrill in the second left interspace, and a rasping systolic murmur over the same area. These findings and the findings in the two cases observed by me, although varying in many respects, are fairly constant in one particular: nearly all signs are referable to the pulmonary area or, rather, they are more marked in that situation.

In none of the cases contained in the literature was the Roentgen ray used as an aid to the diagnosis of this condition. This is important, as by means of roentgenoscopy any ectasias of the arch which might give identical signs could be discerned.

In conclusion it might be stated that aneurysm of the sinus of Valsalva, although comparatively uncommon, is not so rare as to be altogether devoid of clinical interest, and, although the diagnosis is infrequently justified, the lesion cannot be excluded in the face of the finding, in a young syphilitic, of a saw-like bruit and thrill most marked in the pulmonary area and a negative roentgenogram.

THE TREATMENT OF GALL-BLADDER INFECTIONS

WITH A REPORT OF TWENTY-SIX RECENT CASES *

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Although asked to discuss the "treatment of gall-stones," I have preferred to substitute the word "infections" for "gall-stones," as we now know that the primary cause of these stones is a microbic infection reaching the gall-bladder either through the blood or directly through the bile-passages from the intestine.

It is not my intention to deal minutely with the various operations which may be required in gall-bladder diseases, but rather to consider the indications for operative interference in these diseases and to present some of the pathologic complications which may arise when these indications are not heeded. I shall also say something about the mortality following operative treatment and its causes.

As a basis for my remarks I have taken the gall-bladder cases in which I have operated during the past six months and shall give a brief synopsis of each case. They number twenty-six, fourteen patients having been operated on at the Jefferson Hospital and twelve at the Pennsylvania Hospital. My figures might be more convincing if they were larger, but they represent a season's work and sufficiently illustrate every point I would like to make.

In considering the indications for operation, I would say that if one feels warranted in making a diagnosis of gall-stones or gall-bladder infection, he should also feel warranted in advising operation, unless there be some definite contra-indication. I am sure we all agree that if stones are present, no medicinal agent can dissolve them or make them pass through the ducts into the intestine. If the passage of stones does occur, it is Nature and not medicine that brings it about, and the passage of a few or many stones does not mean that all have passed or will pass. Case 12 illustrates this point well. While we are waiting and watching for our medicines to do the impossible, or while we are helping our patients to bear the repeated attacks of colic, the stones are increasing in number and in size, and the patient is running the risk of developing one of the serious complications to which gall-stones give rise and which are amply illustrated in the accompanying cases. When the stones are in the gall-bladder only and the drainage of that organ is not disturbed, an operation is a simple matter; but when

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* Because of lack of space, this article is here abbreviated by omission of the case-reports. These, however, will appear in the author's reprints, a copy of which will be sent by the author on receipt of a stamped, addressed envelope.

the stones have passed into the common duct, when they are ulcerating through into the duodenum or colon, when they have blocked the cystic duct and given rise to an empyema, when the smaller bile-passages of the liver have become infected and jaundice is present, when the patient has developed an acute or even a chronic pancreatitis, or when the stones have by their constant irritation caused a cancer of the gall-bladder, the operation becomes at once more serious and sometimes hopeless. If we could cure only a few cases of gall-stones by medicinal means, there might be some excuse for postponing what is in most cases inevitable. Such postponement is not fair to the patient, and it is more honest to state the case fairly to him and let him decide what line of treatment he will have. He would be a fool who chose operation if told that by medical treatment he could be cured but cure by such means is not possible, and any sensible man or woman convinced of his medical adviser's honesty and ability will follow the advice of the latter. When the crisis or complication comes, the patients who may have suffered for years from sufficient symptoms to warrant surgical intervention, are often keener for operation than the surgeon is. What we need is to understand that to await serious symptoms — for instance, chills, fever and jaundice — is comparable to awaiting glandular metastasis and malignant cachecia before making a diagnosis of cancer. The time to look for and extinguish a fire is when we see the smoke and not when the house is wrapped in flames; then a child can make the diagnosis.

I have had in mind while making the foregoing remarks the cases in which the medical attendant has but little or no doubt in his diagnosis. In these cases it would seem that his duty was clear, but any surgeon's experience goes to show that the large majority of the patients are not operated on until some marked pathologic complication has developed. In most of the cases here reported some such complication was present, and the average duration of symptoms was over six years. The patients operated on during the most favorable period are usually those who come into the hospital wards — patients who can't afford to be invalids or to pay for medicinal treatment.

But what of the cases that do not show unmistakable signs of gall-bladder disease? Many can be diagnosed by obtaining a careful history and making an examination of the abdomen, especially at a time when the patient is having his greatest discomfort. The most constant, the earliest and the most persistent symptom of gall-bladder infection is what the patient calls "indigestion," which is manifested by a sense of "fulness" or "distention" in the upper abdomen, coming on especially at night and without any definite relation to the taking of food. He is apt to eructate quantities of gas and, if his discomfort increases to actual pain, he may vomit. The prompt relief which vomiting gives in these cases is of great diagnostic value. When the patient complains of gastric symptoms which are not characteristic of ulcer of the stomach or duodenum, the gall-bladder is often the cause of the trouble. An infected gall-bladder is nearly always tender and if tenderness is present, in connection with the type of indigestion referred to, then in the absence of symptoms suggestive of some other lesion, one is justified in holding the gall-bladder under suspicion and watching the patient carefully. If the gastric symptoms are persistent and if the tenderness is marked a diagnosis of gall-stones is warranted and operation indicated. If, in addition, the patient has sharp attacks of upper abdominal pain, referred or not to the back or right shoulder-blade, and accompanied and relieved by vomiting, one can feel more certain of the diagnosis. A transient jaundice following such an attack completes the picture. But jaundice is not essential for a correct diagnosis, it having been estimated that about 80 per cent. of the gall-stone patients operated on have never had jaundice. In the twenty-six cases here reported it had occurred or was present in fifteen. It seems unnecessary to repeat that if the patient has typical attacks of severe gall-stone colic, operation should be done, and the same applies to cases presenting evidences of serious infection of the gall-bladder or ducts. These are the cases of which I spoke in the beginning in which there is no doubt whatever as to the seat of the trouble.

Can we rely on the less typical symptoms given above? I believe if one is careful to eliminate other conditions, such as gastric or duodenal ulcer, chronic appendicitis, etc., the gall-bladder will be found to be the seat of the trouble. Is it not a fact that when one operates on these suggestive symptoms he often finds nothing? This has been my experience in some cases. I have studied very carefully my mistakes in diagnosis and with more care before operation and more experience, they are becoming much less frequent. The twenty-six cases reported here are all in which I have operated since Sept. 1, 1913, and I have felt that in none has the operation failed to develop the cause of the symptoms in the gall-passages.[1] I have previously discussed my errors in diagnosis. In one of the malignant cases here reported (Case 14) I made the mistake of first exploring the kidney, and in another (Case 19) the symptoms pointed to the kidney and the correct diagnosis was based on the Roentgen-ray findings alone. This was a case of calcareous gall-bladder with stones.

One point which I made in the former paper and should like to repeat here is that the gall-bladder can easily be the cause of very definite symptoms and still not contain stones, and that physicians often make the mistake of telling the patient he has gall-stones and are then unable to produce them. Although there may be diseased conditions in the gall-bladder and ducts amply sufficient to account for the symptoms, he is never quite satisfied because the expected stones were not found. He must be told that gall-bladder symptoms may result from other causes which demand operation just as much as the presence of stones. In this series there were two cases of acute cholecystitis without stone and three of chronic cholecystitis without stone. In my opinion these patients would have later developed stones had they recovered without operation.

This brief series of cases shows a variety of pathologic conditions which give some idea of what may be found in gall-bladder surgery. I regret that it does not contain a case of acute pancreatitis, which is so commonly caused by infection from the bile passages, and a case of rupture of the gall-bladder from over-distention, but I feel that what these cases do show is sufficient to teach the lesson that it is undesirable to allow patients with gall-bladder symptoms to drag along until some complication renders an operation imperative and often dangerous.

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[1] In a paper read before the Massachusetts Medical Society, June 11, 1913; Boston Med. and Surg. Jour., Dec. 4, 1913.

There are 3 cases of acute gangrenous cholecystitis, in all of which the patients recovered; 2 cases of acute cholecystitis without stone, one developing two weeks after typhoid fever; 8 cases of stones in the common duct; 1 of stone in the ampulla of Vater requiring duodenotomy; 1 of calcification of the gall-bladder; 1 of abscess formation in the liver and spleen; 1 of subdiaphragmatic abscess two weeks after operation in a case of acute cholangitis due to stones in the common duct; 1 of cirrhosis of the liver; one of stones ulcerating into the colon; 20 cases of stones in the gall-bladder alone or associated with some of the enumerated complications, and 2 cases of cancer of the gall-bladder. The greatest number of stones (771) was found in one of the malignant cases.

In addition to the findings at operation the following points in the history of these cases may be of interest: In 5 cases there was a definite history of typhoid fever; in 12 it was definitely stated that there had been no typhoid fever, and in 9 cases no mention of typhoid is made in the history. Jaundice was present or there was a history of jaundice in 15 cases; no jaundice or history of it in 11 cases. The duration of the gall-bladder symptoms varied from one week to thirty-three years in 21 cases, was not given in 1 and given as "many years" in 4 cases. In the 21 cases in which the duration is definitely stated, the average is over six years. The youngest patient was 19 years old and the oldest 69 years; there were four patients between 19 and 30 years of age; four between 30 and 40; nine between 40 and 50; three between 50 and 60, and six between 60 and 70 years. There were eleven men and fifteen women.

There were five deaths as follows:

In Case 7 I drained an abscess of the liver and overlooked a large abscess in the spleen, which was found at necropsy. The patient was extremely ill and a diagnosis of stone in the common duct with suppurative cholangitis had been made. After removing a number of stones from the gall-bladder and draining a small abscess in adjacent portion of the liver, I thought I had found all the trouble. The patient died a few hours later.

In Case 8 there were about thirty stones in the gall-bladder and cancer of the gall-bladder with extensive involvement of the liver and glands was present. The patient died about a month after the operation.

In Case 18, a woman, aged 69, had declined operation when she was in good condition and did not consent until she had a severe attack of pain followed by jaundice, fever and a high leukocytosis. She was a dangerous risk, but I thought she would die if not operated on. I might have saved her by waiting for these acute symptoms of sepsis to subside, but my judgment was in favor of operation. She had stones in the gall-bladder and common duct and a quantity of sand and debris in the hepatic duct. She had had her first typical attack of gall-stone colic twenty-five years before and for two years had had frequent attacks.

Case 22 is similar in many ways to the preceding. The patient was 65 years old. I saw her when she was jaundiced and advised operation when she had improved. Before the jaundice had entirely disappeared she began to have chills and fever and I was obliged to operate when she was very septic. She had stones in the gall-bladder and common duct. She died from complete suppression of urine on the second day after operation without any abdominal symptoms and with a free drainage of bile. She had been having attacks of gall-stone colic for many years.

In Case 24, a man aged 45 was operated on when jaundiced but when acute pain and fever had subsided. He died seventeen days after the removal of stones from the common duct and gall-bladder, from an undiagnosed subdiaphragmatic abscess, which gave rise to no fever and no other evidences of its existance. At the necropsy the gall-bladder and ducts were in good condition.

It will be noticed that all of these deaths occurred in very ill patients; one with malignancy a month after operation; one with an abscess in the spleen; and three with acute cholangitis from stones in the common duct. With one exception, the malignant case, they were all jaundiced at the time of the operation.

In the uncomplicated case the risk of the operation is no greater than in any clean abdominal operation. In the cases of common-duct stone with cholangitis there is always the risk of death from sepsis, but the risk is greater without than with operation. Postoperative bleeding in the jaundiced cases can usually be prevented by the use of horse-serum; in all such cases the coagulation time should be taken and, if it is beyond the normal limit, it should be reduced by the injection of the serum. In this series of cases there was but one instance of bleeding, and this was not marked; it came on two weeks after operation when the patient was dying from a subdiaphragmatic abscess.

One is often asked what the chances are of gall-stones reforming after operation. My own conviction is that when all stones are removed and the gall-passages properly drained for about two weeks, recurrence is extremely rare. I can recall but two secondary operations in my own cases. In one case, I removed a stone from the common duct two years after my first operation, but here I felt it had been overlooked at the first operation, when I had removed 137 stones from the gall-bladder and 7 from the common duct. In the second case, that of a physician, there was a return of symptoms four years after the removal of 69 stones from the gall-bladder and I felt I might have left a stone which was causing the trouble. I was relieved to find 21 stones in the gall-bladder, for although I might have failed to obtain a stone in the ducts, I could hardly have overlooked 21 stones in the gall-bladder. This, I think, was clearly a case of redevelopment of stones. I removed the gall-bladder at the second operation.

I believe that this experience of six months in gall-bladder surgery represents pretty well what surgeons everywhere are finding and doing and that it teaches lessons by which we all may profit.

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A Suggestion for Applicator.—Because of the bulk of the applicator and the minuteness of the sinus, it is at times inconvenient to apply fluids with the ordinary cotton applicator. The so-called "sanitary pipe-cleaner"—everywhere obtainable, inexpensive and easily sterilized—is suggested to replace the cotton applicator. It is especially useful in fistulas and sinuses of the long bones.—Charles J. Rothschild, M.D., Fort Wayne, Ind.

GASTRIC HYPERTONY AND GASTRO-ENTEROSTOMY

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Every one is familiar with the brilliant results which usually follow a gastro-enterostomy for the relief of gastric ulcer. The patient makes a good recovery from the operation, the pain is relieved, vomiting ceases, weight is gained and the patient is clinically cured.

Occasionally, however, the operation is only a partial success or even an absolute failure. Vomiting recurs either while the patient is in the hospital or when the usual mode of life is resumed. Pain reappears and the patient may be as miserable as before. Indeed, the condition may be more serious, because of the stress of the operation, and the mental depression felt, as a result of what seems a failure of the most energetic measures to relieve the suffering.

This unusual course of events sometimes occurs when a correct diagnosis has been made, and the operation performed by a skilled and experienced surgeon. The following case-abstract will serve to illustrate:

A married woman, aged 28, who had one child in good health, was well until November, 1911, when she had a "cold." While recovering from this she drank some coffee one evening, this being the first food she had taken for two days. She became nauseated and vomited without pain, and without relief. This recurred after every meal for three weeks; then there was an interval of two weeks during which she ate what she pleased without nausea or pain, but she "did not feel herself." Following this, the vomiting recurred and continued constantly, that is, some food was vomited daily, until August, 1912, when she had an operation (gastro-enterostomy) performed. Vomiting again occurred while she was still in the hospital, and in September, 1912, she was worse than before the operation.

In August, 1913, a second operation was performed (adhesions broken up), which was followed by relief for about seven weeks. In October, 1913, vomiting again recurred almost daily. Roentgenoscopy revealed both the pylorus and the gastro-enterostoma functioning, but a bismuth residue after eight hours.

Obstruction was diagnosed, and at operation adhesions were found partly constricting the small intestine just below the gastro-enterostomy. These were severed and the patient did well until about two weeks after the operation; then on the day before leaving the hospital she began vomiting again.

Four other cases of this character might be reported, but this would be unnecessary repetition. That my experience is not unique is shown by the report of Zweig[1] of Vienna, who records twenty-seven such cases. That the unfavorable results are not necessarily due to faulty surgical technic has been repeatedly demonstrated by roentgenographic examination and actual inspection at a second operation. What, then, is the explanation?

The answer will be found in an understanding of the physiology of gastric motility and the disturbances of this function, which often precede and accompany gastric ulcer, that is, the *Vagotonie* of Eppinger and Hess,[2] hyperkynesis or spasticity of the stomach. While this reference opens the whole subject of visceral neurology, for present purposes it is sufficient to recall briefly the innervation of the stomach.

This organ receives nervous influences from three sources: it receives tonic or motor impulses through the vagus and inhibitory impulses through the sympathetic, and it may perform its functions fairly well when both splanchnics and both vagi are severed, being controlled under these circumstances by the local ganglionic plexuses of Auerbach and Meissner.[3]

In the condition described by Eppinger and Hess, there exists a state of affairs corresponding to excessive vagus stimulation, or a stimulative vagus neurosis, and while this manifests itself in other regions corresponding to the wide distribution of the nerve, our present concern is with the effects on the stomach. As one might suppose, both the motor and the secretory functions are increased. There is usually hyperacidity, pylorospasm and increased muscle tone with occasional spastic contraction. These patients say that they cannot take much food, the stomach feels full after even a meal, and there is a knot in the throat, cramp in the epigastrium, a feeling of tightness and constriction in the thorax, cardiac disturbance and the eructation of gas. Vomiting often occurs soon after eating, and is especially apt to be produced by excitement and anxiety.

Roentgenoscopy reveals a small stomach which fills with bismuth slowly, a mere thread trickling down toward the pyloric region, the stomach wall is tightly contracted around the contents, and the gas bubble in the fundus is small. Antiperistalsis and vomiting sometimes occur during examination.

The association of hyperacidity and pylorospasm with gastric ulcer is well known and needs no discussion here, but the effect of excessive tonicity and spastic contraction on the functioning of the stomach—after a gastro-enterostomy—is not so generally recognized. It is to this, therefore, that attention is especially invited.

Whatever may be the state of the stomach-muscle at other times, it is usually found relaxed at the time of operation; if it is not, relaxation is usually produced before the anastomosis is made. Now if the stoma is made of the usual size and in the correct location, it will functionate properly while the gastric motility is normal or even weakened; but if the neuromuscular mechanism is hypertonic and hypersensitive, this condition is not removed by an operation, and therefore as soon as the patient is in a position to receive the usual stimuli, that is, to take a full meal and resume the cares and annoyances which were present before the operation, spastic contraction of the stomach recurs. Not only is there pylorospasm as before, closing that outlet, but the contraction of all the muscle fibers in every direction greatly reduces the size of the surgical orifice and will at times close it entirely. Cramp, reverse peristalsis and vomiting recur, and clinically the patient is as ill as before the operation.

These symptoms often suggest obstruction, and a roentgenographic examination is made which may show both the pylorus and surgical orifice patent unless the examination is made when the stomach is contracted, that is, during an attack, when it will show a hypertonic stomach with no trace of bismuth passing through the new opening. A secondary operation will show the surgical opening patent and reveal nothing except a few minor adhesions such as occur after any operation.

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[1] Zweig, Walter: Die Misserfolge der Gastroenterostomie bei Pylorusstenose infolge spastischen Verschlusses der Magenfistel, Arch. f. Verdauungskr., 1913, xix, 740.

[2] Eppinger, H., and Hess, L.: Die Vagotonie, Samml. klin. Abhandl. über Path. in Therap. d. Stoff u. Ernahrungsstorungen, Berlin, 1910, Nos. 9 and 10.

[3] Carlson, A. J.: Contributions to the Physiology of the Stomach: vi, A Study of the Mechanism of the Hunger Contractions of the Empty Stomach by Experiments on Dogs, Am. Jour. Physiol., 1913-1914, xxxii, 369.

If this explanation is the correct one, what is the remedy?

All ulcer cases should be examined for signs of vagotony, and if these are present, such cases should be regarded as unsuitable for surgical treatment; or if operation is imperative, as it sometimes is, suitable medicinal and hygienic remedies should be combined with the usual postoperative management.

The recognition of vagotony is not difficult if one will remember that there is such a syndrome, and examine the patient for the signs pointed out by Eppinger and Hess. These are the gastric symptoms already given, to which must be added either a few or all of the following: bradycardia, disturbances in the respiratory rhythm, a tendency to bronchial asthma, dermography, urticaria, local sweating, demonstrable "Head zones," low blood-pressure, pigmentation of the skin, eosinophilia, spastic constipation alternating with nervous diarrhea, and other minor signs of disturbances in the autonomous nervous system.

In vagotonic patients with gastric ulcer, it is not sufficient to perform a gastro-enterostomy and discharge the patients with advice to be careful about the diet; for although the operation may render local conditions more favorable for the healing of an ulcer, by providing for a more prompt discharge of food and the neutralization of the acid gastric contents by the bile, the important conditions underlying the formation of ulcer have not been removed, and if neglected may again annoy the patient and thus embarrass the physician.

Reference is again made to the irritable vagus. A surgeon, von Bergmann,[4] in his researches, has demonstrated that disturbances of innervation involved in secretion, motor and sensory function of the stomach constantly accompany both duodenal and gastric ulcer, and also that in the majority of cases, abnormal functioning in other organs dependent on the vegetative nervous system is plainly evident.

The conclusion follows that a neurotic general constitution and neurotic phenomena in the stomach and duodenum seem to be responsible for primary erosions, and also tend to prevent healing, thus establishing a vicious circle. Therefore drugs and other therapeutic measures acting on the vegetative nervous system are indicated in the treatment of gastric and duodenal ulcer *after* as well as *before operation.*

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[4] Bergmann, G. von: Ulcus duodeni und vegetatives Nervensystem, Berl. klin. Wchnschr., Dec. 22, 1913, p. 2374.

Infant Mortality in New York City.—According to a tabulation of W. H. Guifoy, registrar of records of the Department of Health, New York City, the death-rate per annum of children under five years has fallen from 96.5 per 1,000 in 1891, to 61.3 in 1901, 43.8 in 1911 and 37.3 in 1913. For the summer months—June, July and August—the death-rate of children under five years of age during the same period was 125.1 per 1,000 in 1891, 76.2 in 1901, 46.3 in 1911 and 38.8 in 1913. This reduction is believed to be due largely to the use of pasteurized milk, but doubtless also to other hygienic and sanitary measures adopted as the result of a constant agitation, legislation and the efforts of the health authorities.

THE NON-SPECIFIC ACTION OF A SERUM PREPARED ACCORDING TO THE METHOD OF BEEBE *

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The treatment of exophthalmic goiter with a specific thyrotoxic serum, so that just the required amount of thyroid could be destroyed *in situ,* is desirable. Ten years ago, one of us (Portis) produced such a serum by injecting dogs' thyroids into goats. The cytotoxic serum so produced, although strongly thyrotoxic, was unfortunately also cytotoxic for the various viscera, especially the liver and kidney, and was markedly hemolytic. Stimulated by the reports from both the laboratory and the clinic, in the use of nucleoproteins derived from tissue cells as antigens, and the assertions that such serums are specific, we undertook the following work in December, 1912:

Normal human thyroid glands were obtained shortly after death and nucleoproteins were prepared according to the method of Beebe. These were injected into Belgian hares and rams in doses recommended by Beebe. Considerable difficulty was experienced in immunizing our earlier animals, for most of them died after repeated injections, with a severely toxic picture simulating anaphylaxis. After repeated failure, we at last succeeded in immunizing a ram. The technic of the preparation of the nucleoprotein material used, and the manner of its injection, are given in detail.

At the beginning of the work the material for injection was prepared as follows:

The normal glands were obtained as fresh as possible from necropsy cases and kept in normal salt solution, with a small amount of chloroform, in the ice-box until they were further prepared. No glands were used which stood longer than over night in such condition. They were then ground to a fine pulp in a food-chopper and then macerated with chemically pure sand in a mortar, after which the glands were extracted with from three to four times their volume of normal salt solution made faintly alkaline with sodium hydroxid (from 3 to 4 drops of 10 per cent. sodium hydroxid to 1 liter of sodium chlorid solution). Before the salt solution was added, all blood was strained off through gauze, so that only the solid part was used. The mixture was then shaken vigorously for about an hour, after which it was transferred to the refrigerator for from twelve to eighteen hours, a small amount of chloroform being added to keep down any possible contaminating bacterial growth. At the end of from twelve to eighteen hours the material was filtered through gauze and then fine filter-paper. The filtrate was weakly acidified with acetic acid and heated at 44 C. (111.2 F.) for ten minutes or longer, according to the time necessary to bring down the precipitate. This precipitate was washed repeatedly with normal salt solution, until the washings no longer gave the biuret reaction. It was then dissolved by rendering the precipitate faintly alkaline with 10 per cent. sodium hydroxid and filtered through heavy filter-paper. In every preparation made, this procedure was repeated to insure a perfectly pure product. It is needless to say that this was all done in as sterile a manner as possible. Cultures were made from the end-product, and if bacterial growth appeared, this was discarded. This is the method of Beebe.[1]

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* From the Pathological Laboratory of St. Luke's Hospital.
* Read before the Chicago Pathological Society, April 13, 1914.

In each of the preparations the gross material was weighed and the solution measured, so that the equivalent of a certain amount of gross thyroid might be estimated by measuring out certain amounts for injection.

With this material the following animal inoculation experiments were carried out:

Belgian Hare 1.—Dec. 23, 1912: Injected intraperitoneally with the equivalent of 15 gm. human thyroid.

December 30: Injected with the equivalent of 20 gm. thyroid.

December 31: That morning the hare was found dead. The necropsy revealed no peritonitis or any gross pathologic changes. Cultures were sterile.

Hare 2.—Jan. 2, 1913: Injected intraperitoneally with the equivalent of 10 gm. thyroid.

January 8: Injected with equivalent of 15 gm. thyroid. The hare died some time during the night. The necropsy showed no gross pathologic changes, but the symptoms seemed to be rather anaphylactic in type. Cultures were sterile.

Hare 3.—Jan. 14, 1913: Injected intraperitoneally with the equivalent of 7 gm. thyroid.

January 19: Injected with the equivalent of 12 gm. thyroid. The hare died about four hours later from what appeared to be anaphylactic shock. There were no gross pathologic findings, and cultures were sterile.

Ram 1.—Dec. 23, 1912: Injected intraperitoneally with the equivalent of 85 gm. thyroid.

December 30: Injected with the equivalent of 100 gm. thyroid. On injection gas bubbles having a strong odor of hydrogen sulphid escaped through needle. The ram appeared well.

Jan. 7, 1913: Injected with the equivalent of 120 gm. thyroid. About five minutes after injection the ram had marked defecation and was very unsteady on its feet. In the afternoon it appeared to have recovered.

January 16: Injected with the equivalent of 90 gm. thyroid.

January 18: The ram died some time during the night. The heart's blood gave almost pure growth of staphylococcus. There was slight inflammation of the omentum at the point of injection. No peritonitis was seen. The left lung showed consolidation, and a purulent material could be squeezed out of the small bronchioles. The intestines were very much dilated. The thyroid gland was very small and of hard consistency. No other gross pathologic changes were found.

Ram 2.—Jan. 27, 1913: Ram injected intraperitoneally with the equivalent of 100 gm. thyroid.

February 1: Injected with the equivalent of 95 gm. thyroid.

February 8: Injected with the equivalent of 125 gm. thyroid.

February 13: Injected with the equivalent of 120 gm. thyroid. On the morning of Feb. 16, 1913, the ram was found dead. No necropsy was held, but during the course of the injections the animal showed almost typical signs and symptoms of hyperthyroidism.

Following these experiments a change was made in the immunization. The method of preparation was the same, but 1 gm. of thyroid to 100 c.c. of normal salt solution was used. This 1 per cent. solution was injected in smaller doses than in the previous experiments.

One hare and one ram were inoculated, the date and results being as follows:

Belgian Hare.—May 16, 1913: Injected intraperitoneally with 5 c.c. of this 1 per cent. solution.

May 22: Injected with 10 c.c. of 1 per cent. solution.

May 28: Died toxic death; cultures were sterile.

Ram.—May 17, 1913: Injected intraperitoneally with 10 c.c. of 1 per cent. solution.

May 22: Injected intraperitoneally with 20 c.c. of 1 per cent. solution.

June 2: Injected intraperitoneally with 40 c.c. of 1 per cent. solution.

June 9: Injected intraperitoneally with 45 c.c. of 1 per cent. solution.

June 20: Injected intraperitoneally with 75 c.c. of 1 per cent. solution.

July 14: Injected intraperitoneally with 65 c.c. of 1 per cent. solution.

July 3 the ram was bled and 600 c.c. of blood removed.

July 20 the ram was bled to death and about 4.5 liters of blood were obtained.

July 14 a healthy ram was bled to have normal blood for purposes of control.

The serum obtained from the immunized ram was studied for the presence of agglutinins. This is taken as an indication of the presence of specific antibodies and also determines their strength. We standardized ours according to the method of Beebe as follows:

Fresh human thyroid was ground very fine and extracted with normal salt solution. The mixture was then strained through gauze to remove the coarser particles and then centrifuged in a high-power machine. The upper layer of the sediment, together with a small amount of the supernatant liquid, was thoroughly shaken, a small amount of normal salt solution was added and the shaking repeated. This was placed in 1 c.c. amounts in small tubes. To each tube, 1 c.c. of various dilutions of the immune serum was added. For control, 1 c.c. of similarly diluted normal ram's serum was added to another set of tubes. The contact method was used and the serum floated on the emulsion. This method brings about the reaction more distinctly. In the dilutions of 1 : 2 and 1 : 10 the agglutination ring was observed within a few minutes, and in higher dilutions of 1 : 100 after standing for several hours.

The normal serum gave no reaction at all, and we were quite enthusiastic. Dr. Wells suggested that we make similar tests, using emulsions of other human viscera. In exactly the same manner described, emulsions were prepared from the kidney, liver and spleen and these all gave as marked and as prompt a reaction with the immune serum, as did the emulsion of the thyroid.

The method used by Beebe and followed by us does not, according to Wells, produce nucleoproteins, but rather salts of protein and nucleic acids. He says:

> It seems probable that in the living cell the nucleic acids must exist bound to protein molecules, but that these compounds are the same as those which are precipitated from either neutral or alkaline extracts of the cells or tissues, is highly doubtful, a fact universally recognized by physiological chemists. With an abundance of proteins of all sorts and conditions present in such extracts and in view of the easy dissociation of the compounds of nucleic acid and proteins, it is to be supposed that the nature and proportion of the protein which is thrown down with the nucleic acid will depend entirely on the conditions existing at the time. Variations in the concentration and character of the proteins, in the proportion of nucleic acid, of the concentration of salts and other solutes, of the degree of acidity and alkalinity of the solution, and perhaps even of the temperature, will all serve to cause variations in the composition of the precipitate which contains the nucleic acid.

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[1] Beebe: Am. Jour. Pharm., 1911, lxxxiii, 56.

Pearce and Jackson, after a number of carefully conducted experiments, in 1906, could not confirm the work of Beebe. They did not find any evidence that injections of nucleoproteins produced a specific cytotoxic serum.

Taylor, in 1911, published his experiences with a serum produced according to the earlier methods of Beebe. He used thyroid glands removed by operation from exophthalmic goiter patients, and injected their nucleoproteins into hares. The serum did not show beneficial action in any of the cases in which it was used.

CONCLUSIONS

Nucleoproteins, so-called, of human thyroid glands do not act as specific antigens.

The antibodies produced are probably due to the small amount of protein contained in the injected material.

The action of the serum, so produced, is not specific for the thyroid gland alone, but has a similar action on other organs, especially the liver, kidney and spleen.

We wish to express our thanks to the authorities of St. Luke's Hospital for the privilege of conducting these experiments at their laboratory, and to acknowledge our indebtedness to Drs. Hektoen, Le Count, Wells, Davis and Moody for frequent advice and courtesies.

122 South Michigan Avenue.

AN AID TO PROGNOSIS IN PULMONARY TUBERCULOSIS

A SIMPLE URINARY TEST: THE UROCHROMOGEN REACTION OF WEISZ

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We think that all physicians who have had any considerable experience in the treatment of patients with pulmonary tuberculosis will agree that in many cases it is difficult to make an accurate prognosis. Will this patient recover? Will that patient succumb? These are questions that cannot always be answered correctly. Because of these facts, any test or procedure which will in the slightest degree assist in making more accurate prognoses, especially if simple and easily applied, demands careful attention. We have, therefore, felt justified in outlining our experience with Weisz' urochromogen reaction in the urine of patients sick with pulmonary tuberculosis.

For several years we have considered the presence of a diazo-reaction in the urine (if more than transient) as an unfavorable prognostic sign,[1] but unfortunately the actual practical value of the diazo-reaction is limited, for its absence is not necessarily a favorable prognostic sign, many cases with a hopeless prognosis failing to show it. We have often thought how valuable might be some test or reaction having the same significance as the diazo but more uniformity in its appearance in the urine, if it could be found. It was with considerable satisfaction, then, that a little more than two years ago we noted the publication of a paper by Lieutenant Heflebower,[2] pathologist to the United States Army Tuberculosis Sanatorium, Fort Bayard, N. Mex., describing just such a reaction and his experience with it. We at once determined to add this test to our routine urinary examinations. While two years is too short a time to establish definitely the full value of any test in such a chronic disease as tuberculosis, still, as our experience with it tends to confirm the views held by both Weisz,[3] its originator, and Heflebower, who, so far as our knowledge is concerned, first called attention to it in this country, we have been tempted to report our results, mainly in the hope that others may be induced to use it, so that after several years enough independent reports may be available, covering a sufficiently long period of time, to establish its value fully.

Weisz, after nearly six years of experimental work, found that urochromogen is the principal substance which causes the diazo-reaction, urochromogen itself being a low oxidation product of urochrome, the normal yellow coloring-matter of the urine. He found that one reason for the lack of uniformity in the appearance of the diazo-reaction is that urochromogen has an antecedent which does not react with the diazo-reagent. He furthermore found that a potassium permanganate solution, added to urine, demonstrated the presence of both urochromogen and its antecedent. It will thus be readily seen that this reaction would be expected to be more constant and uniform in its appearance than the diazo, and Weisz and Heflebower have both found this to be so. According to Weisz, urochromogen, being a low oxidation product of urochrome, occurs in the urine only when there is a condition of faulty oxidation. This condition of metabolism is present only when catabolism is affected by some toxin circulating in the blood, and such a condition is present in pulmonary tuberculosis, so he says, only when the focus in the lung is so active or extensive as to surcharge the blood with toxins or battle down the defensive forces of the body, which would otherwise neutralize the effect of these toxins.

As to the value of the test in actual practice, Weisz' personal views, as quoted by Heflebower, are the following:

1 Patients who at the beginning of a course of treatment do not show a disappearance of urochromogen from their urine have a hopeless prognosis.

2. The transient appearance of urochromogen can be found in acute exacerbations of the disease, and is to be regarded as a symptom of progression of the tuberculous process.

3. A distinction between continuous and transient, constant or occasional appearance of urochromogen should be made only as to the prospective duration of the disease.

4. Patients with transient excretion of urochromogen may, if external conditions are favorable, continue to live for several years, while the constant appearance of the reaction, especially when it is plainly becoming more intense, shows a rapid progress of the disease in the lungs and a hopeless prognosis.

Heflebower concludes that:

1. The frequency and constancy of the appearance of diazo and urochromogen reactions in the urines in cases of pulmonary tuberculosis constitute an index to the severity of the condition, a constant negative

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[1] Provided always that certain drugs have not been administered for some time before the sample of urine is collected for examination.

[2] Heflebower, Roy C.: Am. Jour. Med. Sc., February, 1912, p. 221.

[3] Weisz, Moriz: München. med. Wchnschr., 1911, lviii, 1348.

result pointing to a case that is progressing favorably, while a constant positive result indicates a progressively downward case.

2. The urochromogen test occurs more frequently and is more constant than the diazo-reaction. It is, therefore, a better index to the condition of the patient than the diazo-reaction.

3. The intensity of both the diazo and urochromogen reactions is of great import as an index to the severity of the condition, especially as a method of determining the difference in prognosis in cases which show the reactions constantly.

Heflebower also says that "cases showing urochromogen more constantly are for the most part those cases that are having the greatest temperature elevations and loss of weight." This would be expected, for the majority of patients who are not doing well and who do not recover are of that type, but many times this type of case does not show a urochromogen reaction, and it is just here that it is of most value; for by its absence it shows that that particular patient, in spite of seeming and being seriously sick, has a resistance to the disease which the one showing urochromogen has not, and for the time being at least, a more hopeful prognosis may be made. On the other hand, patients not having great temperature elevation, loss of weight, or much lung involvement — patients who, in other words, do not seem to be very sick, and in whom one would ordinarily be tempted to make a favorable prognosis — occasionally show a persistent urochromogen, and in our experience, the great majority of these do not improve. The latter are the cases Weisz means when he says:

> There are some cases whose condition of the lungs is not such that you would be persuaded to give a bad prognosis and who through the presence of urochromogen in the urine first reveal the serious nature of their illness. Parallel with the development of the disease, you find an apparent increase in the excretion of urochromogen.

While we do not make any final conclusions in connection with this report from a prognostic point of view, on account of the reasons stated above, we cannot, on the other hand, help but believe from a study of our observations that the urochromogen reaction does bear a fairly constant relation to the clinical condition of a patient.

Of 113 cases included in this report, 5 were classified as incipient, 28 as moderately advanced and 80 as far advanced. Of the cases of incipient tuberlosis, the urochromogen reaction was negative in 100 per cent., and all of these patients have either recovered or are progressing to recovery. Of the 28 moderately advanced cases, the urochromogen reaction was positive in 32 per cent., and negative in 68 per cent. Of the 32 per cent. positive reactions, comprising 9 cases, 2 patients, or 22 per cent., showed a continuous positive urochromogen reaction and showed no clinical improvement while under observation. In 7 cases, or 78 per cent., the urochromogen reaction was changed from a positive to a negative during treatment, and this change from positive to negative was coincident with a clinical improvement. Of the 68 per cent. negative reactions, comprising 19 cases, 18 cases, or 95 per cent., showed a continuous negative reaction, and of these, 17 patients showed pronounced clinical improvement, and in 1 the condition remained stationary. In 1 case, or 5 per cent., the urochromogen reaction was changed from a negative to a positive, and this change was without any clinical change for the worse in the patient.

Of the 80 far-advanced cases, the urochromogen reaction was positive in 55 per cent. and negative in 45 per cent.; of the 55 per cent. positive reactions, comprising 44 cases, 34 cases, or 77 per cent., showed a continuous positive reaction, and of these, 28 patients became clinically worse and 6 showed clinical improvement. In 10 cases, or 23 per cent., the urochromogen reaction was changed from positive to negative during treatment; 7 of these patients showed coincident clinical improvement, while 3 became worse. Of the 45 per cent. negative reactions, comprising 36 cases, 28 patients, or 78 per cent., showed a continuous negative reaction, and of these, 20 patients showed clinical improvement and 8 became worse. In 8 cases, or 22 per cent., the urochromogen reaction was changed from a negative to a positive, and in 7 of these, the patients became coincidentally worse, while 1 showed improvement.

Heflebower used a control-tube of urine in all of his tests; and because we found, as he says, that "it enables one to distinguish very slight changes of color," we have done the same, performing the test as follows:

Into each of two small test-tubes is put 1 c.c. of urine, and 2 c.c. of distilled water are added; now, to one tube which is to be tested for urochromogen, 3 drops of 1 : 1,000 solution of potassium permanganate are added, the tube is shaken thoroughly and compared with the control tube. The appearance of the faintest yellow color shows the presence of urochromogen and is easily detected by comparing with the control-tube, to which no potassium permanganate is added. The test is read positive, however, only when the solution stays clear.

Our experience with the urochromogen reaction covers over two years in 113 patients. Some individual patients were observed as long a time as two years, the presence or absence of urochromogen being determined every month, the average length of time the entire number of patients were under constant observation being about four months for each patient.

SUMMARY OF TESTS

Type of Case	Number of Cases	Urochromogen Reaction Positive Per Cent.	Negative Per Cent.
Incipient	5	0	100
Moderately advanced	28	32	68
Far advanced	80	55	45

In the light of our experience with the urochromogen reaction, in these patients, it appears to us that the following statements seem at the present time permissible:

1. The presence of a urochromogen reaction in the urine of a patient sick with pulmonary tuberculosis is for the time being of unfavorable prognostic import.

2. The persistent presence of a urochromogen reaction in the urine, in spite of proper treatment, probably means a hopeless prognosis.

3. Its absence is generally, though not invariably (regardless of how sick the patient seems), of good prognostic import.

4. Its prompt and continued disappearance soon after treatment is instituted, in a patient who showed it before treatment, so far as our experience goes, is a favorable prognostic sign; but it will take several

years' observation of these particular patients to determine this point conclusively.

5. Finally, it is not an invariable guide to prognosis, but in the majority of cases is of much value, and as all prognoses must be good, bad or doubtful, it will, if judicially used, help materially to reduce the number in the doubtful class.

JUVENILE PARESIS TREATED BY THE INTRASPINAL INJECTION OF SALVARSANIZED SERUM *

REPORT OF A CASE

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Thirty-seven years ago Dr. Clouston reported the first case of juvenile paresis under the name of developmental general paralysis. Until that time paresis was believed to be essentially a disease of the adult. I have found in medical literature to date records of 228 cases of this disease, and there are other references to which I have been unable to gain access. Clouston made it clear that the symptoms presented by his patient, a boy of 16, differed in no way clinically or pathologically from those of the generally recognized type. The investigations of Noguchi and his co-workers have clearly established the truth of this contention. The real significance of the term "juvenile" is that of *time incidence;* the fact that in one case we are dealing with a congenital and in another with an acquired syphilis is a matter of no moment. In either instance the symptoms are the direct results of the activities of the *Spirochaeta pallida* on the brain cortex. One fact is clearly apparent, that any young congenital syphilitic is potentially a juvenile paretic, and Abraham states that all children of syphilitic parents, giving a positive Wassermann, whether or not they show any evidence of congenital syphilis, should be treated as carefully as if they were adults with definite symptoms of the disease.

The clinical syndrome of the juvenile form varies with the time of onset. Delusions of a sexual nature and grandiose ideas of wealth, strength and ambition do not occur until after puberty. About one-half of the cases develop after adolescence, although the disease may occur in the very young, showing itself by mental retardation or feeble-mindedness.

According to Fennell, 5 per cent. of imbecile children are congenital general paretics. Optic atrophy is an early symptom. Juvenile paresis develops about equally in the two sexes, perhaps slightly more frequently in the female. The cases usually fall under the demented type, but one of Mott's patients and five of Kleinberger's showed grandiose ideas.

The clinical symptoms are so variable and uncertain, however, that often it is only by the serobiologic findings that one can arrive at a diagnosis.

The report of the following case is of interest not because of the rarity of the disease, for it is comparatively frequent, or of anything unusual or distinctive in the clinical syndrome, but rather because of the use of salvarsanized serum intraspinally in this patient.

C., a boy aged 8½ years, was the second child in a family of five, the first having been still-born. The father contracted lues at 17, and according to his statement infected his wife. The blood-serum in his case gave a positive reaction while his wife, on the other hand, presented a negative Wassermann in both blood-serum and spinal fluid. The pressure of the latter was increased. Both the Noguchi and the Nonne tests were negative, as was the Lange colloidal gold reaction. There were twenty-six lymphocytes to the cubic millimeter. Physicians who had seen this woman at the time of her supposed infection were of the opinion that it was luetic. The blood-serum in two younger children aged 5½ years and 5 months, respectively, reacted negatively, while a third, 2½ years of age, gave a positive Wassermann in the blood-serum. The entire family, aside from the patient, gave no clinical evidence of syphilitic infection of the central nervous system, nor were there any symptoms of congenital syphilis in the other children.

Nothing abnormal was observed in C. until the fourth year, when it was noticed that his memory was failing and his face had a vacuous expression. He was sent to school in his seventh year but was unable to learn the simplest things. He was severely punished by his teacher because of his being so unruly and difficult to control. At this time also his walking became difficult and he used his hands in a clumsy manner. The father stated that the deterioration, both mental and physical, had been very rapid during the past year. When I saw him first he acted in a silly manner; he could not feed himself and needed constant oversight, and he talked like a young child.

Examination showed Argyll Robertson pupils, exaggerated knee-jerks, with ankle-clonus and Babinski in both feet. There was marked Rombergism. There was no nystagmus or epileptiform seizures; the background of the eye was normal. There were no signs of congenital syphilis. Serobiologic findings were increased pressure in the spinal fluid and positive Wassermann in both blood-serum and spinal fluid, the latter in all dilutions down to 0.05 c.c. Lange's colloidal gold test gave the characteristic curve of paresis. Noguchi positive; Fehling's normal; lymphocytosis seventy-two to a cubic millimeter.

Before the introduction by Swift and Ellis of the intraspinal method for the injection of salvarsanized serum, few physicians considered juvenile paresis as worthy of treatment because of its being so utterly hopeless. In 1910 Abraham treated a case with intramuscular injections of salvarsan without benefit. In April, 1913, Cotton used salvarsanized serum intraspinally in a case of juvenile paralysis with decided benefit clinically and serobiologically. "It is fair to assume," says Swift, "that arsenic or other drugs introduced into the spinal canal by means of lumbar puncture reach all points of the cerebrospinal system (at least the larger cavities) which are bathed by the cerebrospinal fluid."

The experiments at the Rockefeller Institute with the direct injection of neosalvarsan into the spinal canal, as well as the unfortunate experience at Los Angeles, should be sufficient warning to prevent its further use in this manner, notwithstanding the brilliant work being done by Ravaut and Marinesco with the *in vitro* method. Whatever the anatomic facts may be, the superiority, clinically and serobiologically, of the intraspinal use of salvarsanized serum over all other methods, is beyond cavil or question.

C. has received eight intravenous injections, each of 0.25 gm. of salvarsan followed the next day by an intraspinal injection of 30 c.c. of 40 per cent. solution of salvarsanized serum. The serobiologic reduction has been very slight. The pressure of the spinal fluid is normal; lymphocytes three to the cubic millimeter. Blood-serum is less positive, spinal fluid unchanged. The paretic curve of Lange's colloidal gold test rem[illegible]

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* Read before the American Neurological Association, Albany, N. Y., May 8, 1914.

C[illegible] has been more noticeable. C. can now feed himself; his silly actions and vacuous expression have disappeared; he is much brighter mentally, requires less oversight, observes things much more than formerly, shows some interest in games and talks much more normally. His gait is greatly improved. His parents and all others who have come in contact with him notice the difference; yet notwithstanding all this apparent improvement he has just had his first epileptiform seizure.

It will be observed that Lange's colloidal gold test, which I believe has a real corroborative value, gave the curve of paresis in this patient. In every case of paresis or taboparesis in which we have employed it, it has given the typical reaction of this disease.

In two cases of multiple sclerosis Kaplan observed that one gave the curve of paresis and the other reacted negatively; one case of multiple sclerosis which we examined with this test also gave the latter reaction. A case of tabes without any mental symptoms in a professional man of unusual mentality gave the curve of paresis, while two other tabetics gave that of tabes. According to Jelliffe, if the four reactions are positive, small amounts of spinal fluid being used (from 0.05 to 0.2 c.c.), the diagnosis is almost certainly paresis. In one of our cases in which there were no mental symptoms whatever, nothing except an Argyll Robertson pupil and a left hemiplegia, due to a luetic endarteritis, the serobiologic findings being as above, the Lange test gave the typical paretic curve. Does this mean that in both these cases with no paretic indications paresis will ultimately develop? In several cases in which there have been serobiologic reductions there have been no changes in the paretic curves. Much further observation will be necessary to determine the real significance of this reaction.

In three cases of paresis, in all of which six or more injections of salvarsanized serum have been given, there have occurred two remissions, one of which lasted about two months, while the other one still persists. The third case, belonging to the demented type, has shown no improvement. In the cases which remitted there were very decided serobiologic reductions; in the unimproved patient these were very slight. Our experience has been that clinical betterment and serobiologic reductions go hand in hand. Nothing can be hoped for from the intraspinal method in advanced paresis, yet as Cotton states, there are no contra-indications to its use.

The reaction following the intraspinal injection of salvarsanized serum is as a rule negligible. The temperature seldom reaches 100; usually it is about 99, and the increase lasts from twenty-four to forty-eight hours. Formerly we observed higher temperatures, but with an improved technic they have disappeared. There is a marked increase in the lightning pains of tabetics for twenty-four or forty-eight hours after injection, but aside from the period of the injection these appear to be greatly benefited. The relief of dribbling and retained urine is sometimes truly remarkable.

In only one instance have we observed any untoward symptoms. This was a case of acute luetic meningomyelitis developing on a tabetic base. Twenty-four hours after the fourth intraspinal injection (there was practically no reaction following the three preceding ones), the patient became restless, anxious, and developed slight muscular twitchings. Temperature and pulse were normal. Within four hours the former had risen to 104.2, and the pulse was 100. The patient was absolutely unconscious and remained so for three days. The neck and back were rigid, the Kernig sign was marked and there was every indication of a suppurative meningitis, but the spinal fluid was sterile. The patient gradually improved and is now much better than before he received the injection. Without doubt this is an instance of aseptic chemical meningitis due to the intraspinal use of salvarsanized serum. Swift and Ellis call attention to the fact that the intraspinal injection of salvarsanized monkey-serum in the normal monkey may cause a large increase of cells in the spinal fluid, chiefly polymorphonuclears. In our more than seventy-five injections we have never seen any increase of the polymorphonuclear leukocytes following an injection of salvarsanized serum except in the case above mentioned and in one paretic, when a lumbar puncture caused an intraspinal hemorrhage which cleared up in about four weeks.

There can be little doubt that an aseptic, chemical meningitis presenting all the manifestations, clinical and pathologic, of an acute suppurative meningitis without the infecting organism, may arise from the introduction into the spinal canal of a foreign serum (Sicard, Sophian, Sladen, Brem). My case demonstrates that the same alarming symptoms may follow the injection of the salvarsanized serum.

Endicott Arcade.

Accidental Electrocution by a Weak Current.—Mr. S. was employed in handling pickled fish on a fish wharf. The immense fish-storage shed in which he worked was lighted by electricity in sections, the system being a part of that which operated the plant of the electric light company on the next wharf, the transformer serving for both lighting systems. The small switch-room was in the corner of the lower floor of an adjacent wooden building. At about 11 a. m., Oct. 2, 1913, a dark, misty day with occasional rain, S. desired to work in another part of the shed and therefore went over to the switch-room to adjust the switches. As those who used the switch were generally workers in pickle, salt was present on the damp floor and woodwork. S. did not at the time have rubber boots on. He touched the switch and then leaned against the wall in a crouching position, which was observed by another workman who seized him and threw him out of the switch-room on the asphalt walk, receiving as he did so a violent electric shock. When I arrived a few minutes later, I found no pulsation at the wrist and no heartbeat, but efforts at resuscitation were continued for about one hour when the patient was pronounced dead. The necropsy, made by Medical Examiner S. F. Quimby and witnessed by several physicians, was delayed by legal formalities; it revealed no previously existing pathologic conditions which could have produced death at that time. No method of preservation had been used and it was observed that post-mortem rigidity was less than normal and the skin color more life-like than is usual. The possibility of crossed wire having been eliminated and a test having shown that the voltage of the current which passed through the body of S. did not exceed 111, it was decided that he had been electrocuted by a current not exceeding this strength, which passed through him while his clothes and body were damp from being in pickle and the switch-room also damp with pickle.—C. H. Morrow, M.D., Gloucester, Mass.

New Instruments and Suggestions

A NEW SUPRAPUBIC BLADDER RETRACTOR

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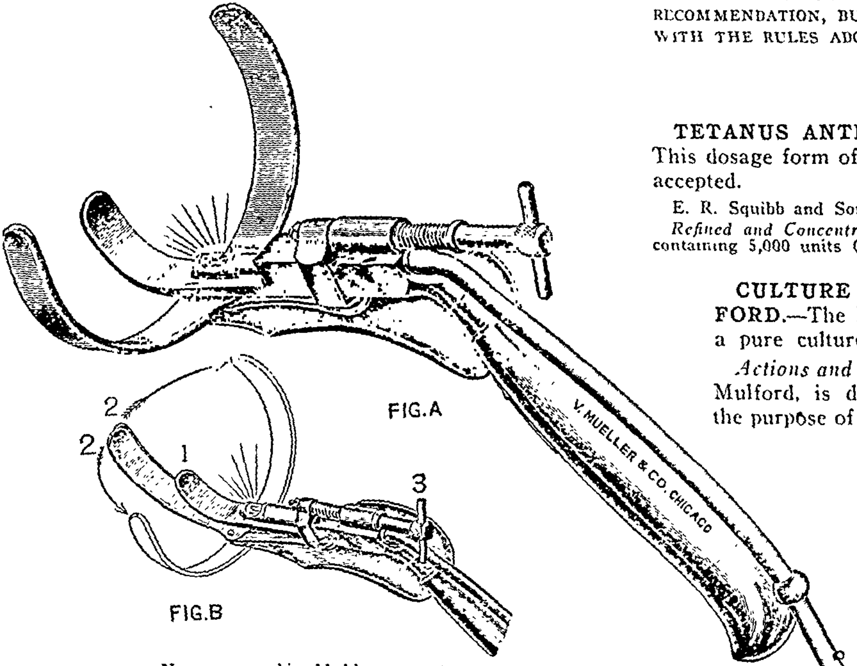
For descriptive purposes, this instrument can be divided into three parts, (1) the shaft, (2) retracting blades, and (3) the light-carrier. The shaft is again subdivided into (1) the vertical handle, and (2) the horizontal main section.

The vertical section is merely a rounded shaft, shaped so as to be easily held in the hand, while retracting. At the lower end is a hole to admit the peg of the light-staff, thus preventing any free play of the light apparatus after its adjustment.

The main or horizontal section of the shaft with its connections serves as a posterior abdominal and bladder-wall retractor, admits the light-staff, serves as a post for the sliding square connecting the screw (3) and the small arms of the bladder blades and carries a pivot-peg for the attachment of the main retracting arms. Through its center is the canal admitting the light-staff. On the upper surface is the screw (3) attached to the sliding square, and so threaded that after the insertion of the closed blades, as seen in Figure B, four complete revolutions open the blades widely. Protruding from the under aspect of the main section, immediately behind the light, is placed the pivot-peg. At the opposite end a strip (not shown in the illustration) is attached, serving to fix firmly the wide posterior abdominal retracting blade. The latter, by the adjustment of the bladder blades to the pivot-peg, is at this point also anchored.



New suprapubic bladder retractor.

The true bladder-blades are of two sizes, small and large, according to the size and contractility of the bladder. Each set of blades consists essentially of two separate arms with rounded edges to avoid injury to the bladder mucosa on opening, and are jointed separately to the pivot-peg. The blades are also connected by two small arms to the sliding square, whose upward or downward passage controls the opening or closing of the retracting blades. The connections are all slip-on joints, so as to permit expeditious adjustments of the blades in changing, the whole making a unique combination of abdominal and bladder-wall retractor.

The lighting apparatus completes the instrument and is rather unique in the brightness of its cold tungsten bulb, the ease of its admission and removal for cleansing in case of obscuring the lamp by blood, and finally the surety of good electrical contact at the end of the staff by the spring-bayonet contact points.

The instrument on introduction through the suprapubic incision occupies no more space than the index-finger.

As the bladder is capable of being distended to a greater degree in the transverse diameter, this instrument is particularly advantageous in examining the internal urethral orifice, both before and after prostatectomy, in suturing over the cut surfaces of the mucosa after prostatic enucleation, in excising tumors and all operations on the ureter that are made intravesically.

32 North State Street.

New and Nonofficial Remedies

The following additional articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Their acceptance has been based largely on evidence supplied by the manufacturer or his agent and in part on investigation made by or under the direction of the Council. Criticisms and corrections are asked for to aid in the revision of the matter before publication in the book "New and Nonofficial Remedies."

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation, but that, so far as known, it complies with the rules adopted by the Council.

W. A. Puckner, Secretary.

TETANUS ANTITOXIN.—(See N. N. R., 1914, p. 243). This dosage form of an accepted proprietary article has been accepted.

E. R. Squibb and Sons, New York.

Refined and Concentrated Tetanus Antitoxin.—Marketed in packages containing 5,000 units (curative dose) put up in syringe containers.

CULTURE OF BULGARIAN BACILLUS, MULFORD.—The Mulford culture of Bulgarian bacillus is a pure culture in tubes of the *Bacillus bulgaricus.*

Actions and Uses.—The culture of Bulgarian bacillus, Mulford, is designed for internal administration for the purpose of establishing lactic-acid-producing bacilli in the intestines. It is claimed that these bacilli are of value in diseases and toxic conditions due to putrefaction in the intestines and are of service in arresting putrefaction in wounds, abscesses and in the various body cavities. Thus it is said to be beneficial in chronic suppurative processes of the nasal passages, and the accessory sinuses, the middle ear, the endometrium and of the vagina.

Dosage.—One tube of the culture in 3 tablespoonfuls of water containing a lump of sugar or taken in a half or full glass of milk. This dose should be repeated morning and evening after meals. The tubes must be kept in a cold place and should not be used after the date stamped on the package.

Manufactured by H. K. Mulford Company, Philadelphia. No U. S. patent or trademark.

LACTOBACILLINE TABLETS.—Tablets containing a pure culture of the *Bacillus bulgaricus.*

Actions and Uses.—The bacilli contained in lactobacilline tablets give rise to the production of considerable quantities of lactic acid, which tends to restrain the growth of putrefactive organisms. They are said to be useful in diseases of the alimentary tract and in such general diseases as are believed to depend on putrefaction in the intestines.

Dosage.—One or two tablets after meals. Lactobacilline tablets are marketed in boxes containing eight tubes of six tablets each, with an expiring date stamped on the label. They should be kept in a cold place.

Manufactured by the Ferment Company, New York (The Franco-American Ferment Company, New York).

Lactobacilline tablets are prepared from the pure cultures of the *B. bulgaricus* which is mixed with lactose and a suitable non-potent mechanical vehicle, slowly dried and compressed. Each tablet contains an abundance of viable *B. bulgaricus* in pure culture and should coagulate 1 liter of sterilized milk in from thirty-six to forty-eight hours when incubated at from 40° to 44° C.

LACTOBACILLINE LIQUIDE, CULTURE A.—Lactobacilline liquide, Culture A, is a pure culture in tubes of the *Bacillus bulgaricus* grown in a neutralized sugar bouillon, each tube containing from 5 to 6 Cc.

Actions and Uses.—See Lactobacilline Tablets.

Dosage.—One or two tubes of the culture are taken twice a day in a small quantity of sweetened water before meals. The tubes should be kept in a cold place, and should not be used after the date stamped on the package.

Manufactured by the Ferment Company, New York (The Franco-American Ferment Company, New York).

One Cc. should coagulate 1 liter of sterile milk in from twelve to twenty-four hours when incubated at from 37.5° to 40° C.

The object of this liquid culture is to secure the maximum quantity of virile and active organisms in a nutrient medium for direct administration.

LACTOBACILLINE LIQUIDE, CULTURE D.—Lactobacilline liquide, Culture D, is a pure culture in tubes of the *Bacillus bulgaricus* grown in a neutralized bouillon.

Actions and Uses.—See Lactobacilline Tablets.

Dosage.—One or two tubes of the culture are taken four times a day in a small quantity of water. The tubes should be kept in a cold place and should not be used after the date stamped on the package.

Manufactured by the Ferment Company, New York (The Franco-American Ferment Company, New York).

Lactobacilline Liquide, Culture D, Small.—Tubes containing 5 Cc. of pure cultures of the *Bacillus bulgaricus* grown in a neutralized bouillon.

Lactobacilline Liquide, Culture D, Large.—Tubes containing 16 Cc. of pure cultures of the *Bacillus bulgaricus* grown in a neutralized bouillon.

This culture contains a minimum amount of sugar and a heavy growth of virile and active organisms. One Cc. should coagulate 1 liter of sterile milk in from twelve to twenty-four hours when incubated at from 37.5° to 40° C.

LACTOBACILLINE LIQUIDE, INFANT'S CULTURE.—Lactobacilline liquide, infant's culture is a pure culture in tubes of the *Bacillus bulgaricus* in a whey medium.

Actions and Uses.—This preparation is employed in the treatment of diarrhea or dysentery in nursing infants or young children.

Dosage.—One or two tubes a day, administered in an equal quantity of sterile water.

Manufactured by the Ferment Company, New York (The Franco-American Ferment Company, New York).

One Cc. of this culture should coagulate 1 liter of sterilized milk in from twelve to twenty-four hours when incubated at from 37.5° to 44° C.

LACTOBACILLINE GLYCOGENE TABLETS.—Tablets containing pure cultures of the *Bacillus bulgaricus* and the *Glycobacter peptolyticus.*

Actions and Uses.—The *Glycobacter peptolyticus* transforms into sugar the amylaceous substances in the diet, thereby furnishing a pabulum for the *B. bulgaricus,* which in turn transforms the sugar into lactic acid. These tablets are designed as a prophylactic against intestinal diseases, as well as a remedial agent in the treatment of ailments due to intestinal putrefactions, auto-intoxications, etc.

Dosage.—One or two tablets two hours after each meal.

Manufactured by the Ferment Company, New York (The Franco-American Ferment Company, New York).

Lactobacilline glycogene tablets are prepared from the pure cultures of the *B. bulgaricus* and the *Glycobacter peptolyticus* which are mixed with lactose and a suitable non-potent mechanical vehicle, slowly dried and compressed. Each tablet contains an abundance of viable bacilli and of glycobacter spores. Each tablet should coagulate 1 liter of sterilized milk in forty-eight hours when incubated at from 40° to 44° C. The characteristic film of the *Glycobacter peptolyticus* should be produced on nutrient bouillon in from twenty-four to thirty-six hours.

LACTOBACILLINE GLYCOGÈNE LIQUIDE.—Lactobacilline glycogene liquide is a pure culture in tubes of the *Bacillus bulgaricus* and the *Glycobacter peptolyticus.*

Actions and Uses.—See Lactobacilline Glycogene Tablets.

Dosage.—One tube in a wineglassful of water two hours after each meal. The tubes should be kept in a cold place and should not be used after the date stamped on the package

Manufactured by the Ferment Company, New York (The Franco-American Ferment Company, New York).

Lactobacilline Glycogene Liquide, Small.—Tubes containing 5 Cc. of pure cultures of the *Bacillus bulgaricus* and the *Glycobacter peptolyticus.*

Lactobacilline Glycogene Liquide, Large.—Tubes containing 16 Cc. of pure cultures of the *Bacillus bulgaricus* and the *Glycobacter peptolyticus.*

One Cc. should coagulate 1 liter of sterile milk in twenty-four hours when incubated at from 37.5° to 40° C., and should produce the typical film of the *Glycobacter peptolyticus* when grown on nutrient bouillon.

LACTOBACILLINE MILK TABLETS.—Tablets containing pure cultures of the *Bacillus bulgaricus* and *Bacillus paralacticus.*

Actions and Uses.—Lactobacilline milk tablets are used in the preparation of scientifically soured milk which serves as a means of administration of the *B. bulgaricus* and also possesses a nutritive value. It is used as a palatable nourishing drink, and in cases of intestinal indigestion and auto-intoxication.

Dosage.—One tablet should be placed in 1 liter (quart) of sterilized milk and incubated for twenty-four hours at 40° C.

Manufactured by the Ferment Company, New York (The Franco-American Ferment Company, New York).

Lactobacilline milk tablets are prepared from pure cultures of *B. bulgaricus* and *B. paralacticus* which are mixed with lactose and a suitable non-potent vehicle, slowly dried and compressed.

LACTOBACILLINE SUSPENSION.—Lactobacilline suspension is a pure culture in tubes of the *Bacillus bulgaricus* grown in a neutralized bouillon medium.

Actions and Uses.—This culture tends to inhibit the growth of deodorant, putrefactive and pathogenic organisms. It acts as an antiseptic and has been found beneficial in chronic suppurative conditions of the nasal passages, antrum, middle ear, in chronic abscesses, and in puerperal putrefactive processes of the endometrium and vagina.

Dosage.—The parts to be treated should be thoroughly cleansed with sterile water or a warm saline solution. The amount of culture to be applied depends on the extent and condition of the involved area, one or several tubes being necessary. The culture should be kept in a cold place, and should not be used after the date stamped on the package.

Manufactured by the Ferment Company, New York (The Franco-American Ferment Company, New York).

Lactobacilline Suspension.—Tubes containing 5 Cc. of pure cultures of the *Bacillus bulgaricus.*

Lactobacilline Suspension Surgical.—Tubes containing 20 Cc. of pure cultures of the *Bacillus bulgaricus.*

One Cc. of this culture should coagulate 1 liter of sterilized milk in from twelve to twenty-four hours when incubated at from 37.5° to 44° C.

LACTOBACILLINE MILK FERMENT.—Lactobacilline milk ferment is a pure culture in tubes of the *Bacillus bulgaricus* and *Bacillus paralacticus.*

Actions and Uses.—See Lactobacilline Milk Tablets.

Dosage.—One tube should be placed in a liter (quart) of sterilized milk and incubated for twenty-four hours at 40° C.

Manufactured by the Ferment Company, New York (The Franco-American Ferment Company, New York).

The organisms in this ferment are grown in a neutral sugar bouillon.

Typhoid Death-Rate and the Army.—The death-rate from typhoid fever per hundred thousand population in the registration area of the United States during the year 1912 (the last report available) was 16.5. The absence of a single death from typhoid in the nearly 100,000 officers and men of the Army who were protected by vaccination contrasts favorably with the 16.5 deaths per an equal number of the general population.—C. C. Bass, M.D., in *Am. Jour. Trop. Dis. and Prev. Med.*

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SATURDAY, JUNE 13, 1914

THE CONSTANCY OF ENDOGENOUS URIC-ACID EXCRETION

Among those who helped to overthrow the older notion that the urea and uric acid excreted in the urine have a common origin was the Bohemian physiologist, Professor Mares of Prague. As early as 1887[1] he formulated the hypothesis that uric acid is the product of the activity of cell protoplasm, whereas urea arises directly from the disintegration of proteins ingested as food. In the divorce of these two nitrogenous substances, urea and uric acid, which were long believed to have a direct genetic interrelationship, uric acid was accordingly made a derivative of that chemical process which forms the basis of cellular activity. The quantity of urea formed in a given time was clearly seen to depend above all on the amount of nitrogenous matter absorbed. When the possible relation of nucleoproteins and purins to uric acid began to be appreciated, Mares insisted that not only the nucleoproteins of the leukocytes (as had been previously maintained), but likewise those of any body-cells may give rise to uric acid.

To-day it is believed that both food-purins and tissue-purins and their precursors can give rise to the excretion of uric acid in man; and the physiologist distinguishes accordingly between the uric acid of endogenous and that of exogenous origin. The idea that the former can be derived in the human body by direct synthetic processes is not commonly accepted. It was Mares in particular who early advanced the conclusion that although the urea output of an individual on a purin-free diet may vary within very wide limits, the excretion of uric acid under these conditions approaches a constant which is fixed for the individual. So long as the view was sustained that uric acid is both formed and destroyed in the organism of man[2] it was not easy to understand how the remarkable fixity of the endogenous quota of uric acid could be maintained. For this reason, in part, the work of Mares was neglected and ceased to attract much recognition. Now that uric acid appears to be a true end-product of human purin metabolism[3] rather than an intermediate stage, the fixed character of the amount excreted when no purins are found in the diet may be viewed in a new light. Constancy in output can thus be interpreted as the expression of some definite function in the body, such as the routine activity of tissue-cells. It does not apply to those found in the muscles; for vigorous exercise does not markedly alter the endogenous output of uric acid. The secretory glands have been suggested as a more probable source of the latter.

If further evidence is needed to emphasize the often observed constancy in the quantity of endogenous uric acid eliminated by one person—a feature substantiated by many investigators in different parts of the world—it may be found in the latest contribution from Mares' laboratory. His assistant, Dr. Faustka,[4] has reinvestigated quantitatively the output of uric acid in some of Mares' earlier subjects, under the original conditions of diet—in one case after an interval of twenty-five years, the age of the subject at the second trial being 70. The variations in the output at the two periods of life were not more than a few milligrams. In 1886 the output was 8.11 mg. per kilogram of body weight in twenty-four hours, as compared with the figure 8.2 mg. for 1911. Other comparable cases have enforced a similar lesson, namely, that the quantity of uric acid excreted by the adult human organism in definite periods under fixed conditions is a physiologic constant.

It must not be assumed, however, that no importance attaches to an estimation of uric acid in the urine unless the endogenous constant is known. The dietary or exogenous sources of this urinary component are so varied and large in comparison with the quota furnished by the body itself, independent of the food intake, that the total daily output, under the usual conditions of feeding, is not significantly modified by incidental variations in the endogenous output. The essential importance of a study of the latter feature lies in obtaining one more constant, like endogenous creatinin, from which to estimate variations incidental to disease when suitable conditions arise.

SANITATION ON THE ISTHMUS OF PANAMA AND ON THE RAND

The report by Surgeon-General Gorgas[1] on the health of the mine laborers of the Rand which appears in this issue contains data and conclusions of the highest importance. The excessive death-rate from pneumonia among the imported or "recruited" native laborers is the central theme of the report, and Gorgas' valuable and unique Panama experience has been freely drawn on for comparison. It seems that for some time the pneumonia-rate on the Rand has been very high, ranging in 1912, for example, from 26.3 in the 21,000 tropical natives to 8 in the 199,000 non-tropical. Apart from the differences associated with race or origin, the suggestive fact is noted that the newly arrived native is by far the greatest sufferer from pneumonia. In 1912, out of 2,031 deaths from pneumonia among the Rand laborers, 1,199 were deaths of men who had been at the mines less than six months. The difference between the tropical and non-tropical natives may be at bottom of the same character since, according to Gorgas, "in general, the tropical is the non-civilized native who has had little contact with the white man's diseases, and the non-tropical, the native who has had more or less contact with civilization and the white man's diseases."

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[2] The exposition of this view will be found in a series of editorials entitled Truth and Poetry Concerning Uric Acid, The Journal A. M. A., Jan. 14 to May 13, 1905.

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[4] Faustka, O.: Ein experimenteller Beitrag zur Lehre von der individuellen Konstanz der Harnsäure beim Menschen, Arch. f. d. ges. Physiol., 1914, clv, 523.

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Taking this fact, which seems to be the only significant epidemiologic fact shown by the Rand statistics, as a starting point, Gorgas proceeds with a masterly analysis of the pneumonia situation as observed on the Isthmus of Panama. In the construction of the Panama Canal the conditions with regard to pneumonia were at the outset very similar to those found on the Rand. In 1906 the pneumonia death-rate among the negroes brought from the West Indies to the Canal Zone was 18.74 per thousand. With the aim of reducing this very high rate a careful study was made of a number of factors that might influence pneumonia. Altitude, ventilation and the effect of sleeping in wet clothes were in turn examined as possible predisposing causes, but in each instance with negative results. "The only difference in susceptibility was shown to be governed by the length of time that the laborer had been on the Isthmus." Pneumonia was four and one-half times as frequent among the men who had been on the Isthmus less than three months as among the men who had been on the Isthmus more than three months. In the Panama Canal Zone, however, the pneumonia-rate did not remain high. The pneumonia death-rate figures are: 1906, 18.74; 1907, 10.61; 1908, 2.60; 1909, 1.60; 1910, 1.66; 1911, 2.24; 1912, 1.30. Now the significant fact is that the sudden and remarkable drop after 1907 was coincident with a radical change in the manner of living. In 1907 the negro laborers were allowed to scatter out along the line of the Canal to "build each man his hut, with a small cultivable piece of land, and bring over his family." It is evident that under such conditions the opportunities for the transfer of pneumococci from carriers to non-immunes are much less favorable than under the barrack system. Gorgas definitely attributes the sudden and permanent drop in pneumonia on the Isthmus to the scattering of the negroes in independent dwellings.

Applying these facts to the Rand situation, the conclusion is drawn that the high pneumonia-rate on the Rand is due to the same factor of barrack overcrowding which was apparently responsible for the initial high pneumonia-rate on the Isthmus of Panama. In accordance with the Panama experience the recommendation is made that so far as possible the negro laborers be allowed to bring in their families and live with them in individual buildings. Where this is not possible much roomier native quarters should be provided. The present allowance (about 14 feet of floor-space!) is much too limited.

Gorgas' conviction that under the conditions described pneumonia is a disease spread largely by contact does not seem likely to pass unchallenged, to judge from the opinion recently expressed by Maynard,[2] who deals with the same body of Rand data reviewed by Gorgas. Maynard declares that "a study of these figures shows definitely that if infections from case to case play any part in determining the prevalence of this disease among 'tropical natives,' it can be, at most, but a very small one." Nevertheless, in view of the striking course of events at Panama, it is hard to see a way of escape from the conclusions reached in Gorgas' investigation.

Gorgas' article is full of details of an unusually interesting character. In Gorgas' opinion, vaccination against pneumonia is worth considering as a protective measure. In 1912 at the Premier Mine, 17,500 inoculated had a pneumonia death-rate of 6.89, and 6,700 uninoculated a death-rate of 17.72.

Those who believe that housing is a matter of real sanitary importance[3] will find support for their views in Gorgas' opinion as to the influence of the crowded quarters on the Rand. "The general objection to such crowding is that it causes the respired air to become vitiated. My great objection to such crowding is that it forces the occupants into close personal contact, and therefore largely increases the spread of any infectious disease."

The advocates of the restriction of liquor-selling will find comfort in Gorgas' views as to the value of even localized prohibition. "Alcohol for the natives, I believe, is an unmitigated evil. It is in no way necessary for his health; in fact it is always hurtful. . . . The two Panama towns of Colon and Panama, at the northern and southern end of the Canal, are not under the jurisdiction of the commission as far as regards liquor-selling. There is no restriction on an employee going to these towns and getting liquor as he wishes and bringing it out into the Zone to his own

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[2] Maynard, G. D.: An Enquiry into the Etiology, Manifestations and Prevention of Pneumonia Amongst Natives on the Rand, Recruited from Tropical Areas, South African Institute for Medical Research, Memoir 1, Nov. 1, 1913.

[3] Housing and Sanitation, editorial, The Journal A. M. A., May 9, 1914, p. 1479.

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[1] Gorgas, W. C.: Recommendation as to Sanitation Concerning Employees of the Mines on the Rand Made to the Transvaal Chamber of Mines, p. 1855, this issue.

Taking this fact, which seems to be the only significant epidemiologic fact shown by the Rand statistics, as a starting point, Gorgas proceeds with a masterly analysis of the pneumonia situation as observed on the Isthmus of Panama. In the construction of the Panama Canal the conditions with regard to pneumonia were at the outset very similar to those found on the Rand. In 1906 the pneumonia death-rate among the negroes brought from the West Indies to the Canal Zone was 18.74 per thousand. With the aim of reducing this very high rate a careful study was made of a number of factors that might influence pneumonia. Altitude, ventilation and the effect of sleeping in wet clothes were in turn examined as possible predisposing causes, but in each instance with negative results. "The only difference in susceptibility was shown to be governed by the length of time that the laborer had been on the Isthmus." Pneumonia was four and one-half times as frequent among the men who had been on the Isthmus less than three months as among the men who had been on the Isthmus more than three months. In the Panama Canal Zone, however, the pneumonia-rate did not remain high. The pneumonia death-rate figures are: 1906, 18.74; 1907, 10.61; 1908, 2.60; 1909, 1.60; 1910, 1.66; 1911, 2.24; 1912, 1.30. Now the significant fact is that the sudden and remarkable drop after 1907 was coincident with a radical change in the manner of living. In 1907 the negro laborers were allowed to scatter out along the line of the Canal to "build each man his hut, with a small cultivable piece of land, and bring over his family." It is evident that under such conditions the opportunities for the transfer of pneumococci from carriers to non-immunes are much less favorable than under the barrack system. Gorgas definitely attributes the sudden and permanent drop in pneumonia on the Isthmus to the scattering of the negroes in independent dwellings.

Applying these facts to the Rand situation, the conclusion is drawn that the high pneumonia-rate on the Rand is due to the same factor of barrack overcrowding which was apparently responsible for the initial high pneumonia-rate on the Isthmus of Panama. In accordance with the Panama experience the recommendation is made that so far as possible the negro laborers be allowed to bring in their families and live with them in individual buildings. Where this is not possible much roomier native quarters should be provided. The present allowance (about 14 feet of floor-space!) is much too limited.

Gorgas' conviction that under the conditions described pneumonia is a disease spread largely by contact does not seem likely to pass unchallenged, to judge from the opinion recently expressed by Maynard,[2] who deals with the same body of Rand data reviewed by Gorgas. Maynard declares that "a study of these figures shows definitely that if infections from case to case play any part in determining the prevalence of this disease among 'tropical natives,' it can be, at most, but a very small one." Nevertheless, in view of the striking course of events at Panama, it is hard to see a way of escape from the conclusions reached in Gorgas' investigation.

Gorgas' article is full of details of an unusually interesting character. In Gorgas' opinion, vaccination against pneumonia is worth considering as a protective measure. In 1912 at the Premier Mine, 17,500 inoculated had a pneumonia death-rate of 6.89, and 6,700 uninoculated a death-rate of 17.72.

Those who believe that housing is a matter of real sanitary importance[3] will find support for their views in Gorgas' opinion as to the influence of the crowded quarters on the Rand. "The general objection to such crowding is that it causes the respired air to become vitiated. My great objection to such crowding is that it forces the occupants into close personal contact, and therefore largely increases the spread of any infectious disease."

The advocates of the restriction of liquor-selling will find comfort in Gorgas' views as to the value of even localized prohibition. "Alcohol for the natives, I believe, is an unmitigated evil. It is in no way necessary for his health; in fact it is always hurtful. . . . The two Panama towns of Colon and Panama, at the northern and southern end of the Canal, are not under the jurisdiction of the commission as far as regards liquor-selling. There is no restriction on an employee going to these towns and getting liquor as he wishes and bringing it out into the Zone to his own home. The only prohibition is that it must not be sold in the Zone. But to get liquor he has to make a longer or shorter railroad trip and go to considerable effort. Our experience has shown that there are a considerable number of men who do not care enough for liquor to make the effort, and therefore do without. Of course there are a large number who bring liquor out and drink as much as ever; but on the whole our prohibition of its sale has largely decreased drunkenness. It has increased the efficiency of our working force so much that generally the men in charge of the laborers in the different districts have asked to have their districts included within the prohibited area. I believe that it would be best for the native on the Rand to have no alcohol at all."

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[2] Maynard, G. D.: An Enquiry into the Etiology, Manifestations and Prevention of Pneumonia Amongst Natives on the Rand, Recruited from Tropical Areas, South African Institute for Medical Research, Memoir 1, Nov. 1, 1913.

[3] Housing and Sanitation, editorial, The Journal A. M. A., May 9, 1914, p. 1479.

EXPERIMENTAL PERNICIOUS ANEMIA AND ALIMENTARY INTOXICATION

The causes of pernicious anemia still remain a problem. Many have inclined to the hypothesis that gastro-intestinal sepsis may be concerned in the pathologically increased hemolysis of which all modern writers find convincing evidence. The belief that the disintegration of red blood-corpuscles is connected in some way with the toxic effect of substances generated in the alimentary tract is reflected in some of the current modes of treatment. By some clinicians active measures are employed to clear the intestinal canal more promptly and effectively than is ordinarily done. The daily washing out of the large bowel through a high rectal tube, combined with dietary measures calculated to reduce bacterial decompositions in the digestive tube, has been advocated; and beneficial results following the liberal use of laxatives have been reported. In discussing them Richard Cabot has conservatively remarked that it is not possible as yet to distinguish between *post hoc* and *propter hoc* with regard to the improvements noted.

There is little doubt that certain known intestinal parasites are capable of giving rise to severe types of anemia. Faust and Tallquist[1] isolated a hemolysin from the bodies of *Bothriocephalus*, for example; and in this case they believed that they could actually identify as oleic acid the hemolytic agent obtained from the parasites. Findings of this sort have suggested that other hemolytic anemias of man may be caused by chemical compounds which reach the blood-current via the alimentary tract. In the case just cited these hemolysins have their origin in the bodies of animal intestinal parasites. In view of the fact that in the bowel there occur at times profound bacterial changes which result in the formation of substances quite unlike those produced in normal aseptic digestion, it is a short step to charge some of these largely unknown derivatives of microbial activity with hemolytic propensities. Such vague hypotheses, however, must be substantiated or disproved by experiment

The amins have long been recognized as products of bacterial changes wrought in the proteins and their derivatives under conditions which may obtain in the gastro-intestinal tract. Many years ago Brieger of Berlin directed attention to such compounds; and two of them, putrescin and cadaverin — which are, respectively, tetramethylenediamin and pentamethylenediamin, and are genetically related to familiar protein digestion products—rank as typical so-called ptomains. Among the newer compounds of this group oxyphenylethylamin (tyramin) has become especially conspicuous of late. It has been isolated from putrid meat,[2] from certain types of cheese,[3] and —what is of especial medical interest—from ergot[4] (*Secale cornutum*). Oxyphenylethylamin is produced from the amino-acid tyrosin by various races of bacteria, among them *Bacillus coli communis*,[5] a known inhabitant of the alimentary tract of man. It is easy to conceive that disturbances in the antagonism between the micro-organisms developed in the bowel might lead to a preponderance of groups which easily produce amins of the sort represented by oxyphenylethylamin. Imidazolylethylamin (histamin) is an added case in point.

These amins are known to be endowed with pronounced pharmacologic potencies and have already found their way into therapeutics. The effects should now be ascertained not only of the heroic doses occasionally necessary in medication, but also of the far smaller quantities comparable with those which might be gradually formed and slowly absorbed under the conditions actually obtaining in the gastro-intestinal tract. An interesting beginning has been made in the medical clinic at the University of Kyoto, Japan, in Professor Sasaki's laboratory. Iwao[6] has subjected animals to repeated daily subcutaneous injections of very small doses of oxyphenylethylamin. Severe anemia of the pernicious type was thereby developed. The blood-pictures deviated strikingly from the normal.

The salts of oxyphenylethylamin do not cause hemolysis *in vitro*. The explanation of the profoundly destructive effects exerted on erythrocytes by the continued administration of this compound must lie in some process in which the damage to the blood-cells is an indirect or secondary consequence. An isolated group of experiments of this sort, however notable, is far from solving the etiology of pernicious anemia; but it represents a rational sort of experimental attack on the problem. The results show the actual production of an experimental anemia by the agency of a recognizable chemical compound of a type which can, and undoubtedly does at times, arise in the alimentary tract. The thorough study of such well-defined substances represents an intelligent way to approach the phenomena of so-called auto-intoxication.

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[1] Faust, E. S., and Tallquist, F. W.: Arch. f. exper. Path. u. Pharmakol., 1912, lvii, 375. The Toxic Properties of Familiar Intestinal Parasites, editorial, The Journal A. M. A., May 4, 1912, p. 1377.

[2] Barger and Walpole: Jour. Physiol., 1909, xxxviii, 343.

[3] Winterstein and Küng: Ztschr. f. physiol. Chem., 1909, lix, 138.

[4] Barger and Dale: Arch. f. exper. Path. u. Pharmakol., 1909, lxi, 113.

[5] Sasaki, T.: Ueber die biochemische Umwandlung primärer Eiweissspaltprodukte durch Bakterien, I, Das Verhalten von Tyrosin gegen Bact. coli commune, Biochem. Ztschr., 1914, lix, 429.

[6] Iwao, T.: Beiträge zur Kenntnis der intestinalen Autointoxication, I, Ueber den Einfluss von p-Oxyphenyläthylamin auf das Meerschweinchenblut, Biochem. Ztschr., 1914, lix, 436.

SUGAR IN CARDIAC METABOLISM

An age of specialization has been reached in the field of metabolism. A few years ago it was the body as a whole that commanded the attention of the student of nutrition; but to-day we are learning to differentiate and recognize the special demands of individual organs and tissues. Each has its own physiologic function to perform and it is possible that each develops a special requirement for energy or the individual nutrients.

Little is known as yet regarding the gaseous metabolism of isolated organs, or of the extent to which various foodstuffs are used by them as sources of energy. It has been clearly demonstrated that incident to their physiologic work the lungs, the kidneys and other glands, skeletal muscles, heart, etc., generate carbon dioxid and require oxygen. Of late the heart in particular has been the subject of detailed investigation because it can readily be made to continue its usual action when detached from the rest of the body and perfused with circulating mediums that can be altered at will. The determination of the respiratory quotient, that is, the ratio between the carbon dioxid produced and the oxygen consumed in a given period, is an excellent index to the character of the metabolism in progress. When carbohydrates alone are burned up in the organism, the respiratory quotient $\frac{CO_2}{O_2}$ is 1; for the other foodstuffs it is lower.

The modern observations on the respiratory quotient of the isolated heart have shown it to vary within the same limits as those for the entire organism, for example, from 0.65 to 0.95 or more. This indicates that the metabolism of such an isolated organ is qualitatively closely allied to that of the body taken as a whole, or is even identical with it. In other words, the isolated heart has to a great extent the power to oxidize fully to their gaseous end-products the same cell or plasma constituents as the whole array of organs in the body has when they are working together in the normal way.

An interesting immediate confirmation of this has been furnished by Dr. C. Lovatt Evans[1] at the Institute of Physiology in University College, London. It is well known that the respiratory quotient of the entire organism is raised when carbohydrate food is taken in quantity; for this material is promptly burned in preference to other nutritive pabulum. So Evans has found that when glucose is added to the circulating blood of an isolated heart-lung preparation, the respiratory quotient of the preparation is raised. The respiratory quotient of the isolated heart is also markedly increased by previous carbohydrate diet, and it is then often decidedly higher (above 0.9) than that which is obtained after the addition of glucose to the blood. How important this dietary factor may be is indicated by the calculation that the normal heart of the dog, for example, obtains about one-third of its energy supply by the oxidation of carbohydrate. But in animals deprived of this foodstuff for some time the amount may be, and usually is, much less than this. Possibly the time may come when running expenses, so to speak, of the body's different departments can be itemized.

THE PRICE OF LABOR EXPRESSED IN TERMS OF FOOD-FUEL

As man is a fuel-consuming machine, it requires no argument to emphasize the importance of knowledge concerning the food-fuel which he needs. It matters little whether instinct is an unerring guide in providing a suitable supply of nutriment for the individual. Unless food is available at a cost within the reach of those concerned, the possibility of inadequate maintenance at once arises. The question of the undernutrition of the masses or the underfeeding of any group in society, whether it be schoolchildren, the indigent sick or the poorest laborers in the community, cannot be solved permanently before the actual nutritive needs of all of these classes are ascertained on an indisputable scientific basis. Only then is it possible to determine if the failure to obtain adequate nourishment is due, in each case, to poverty, or to the lack of suitable food-supplies or to ignorance and perverted judgment in the purchase of the day's ration.

For this reason various "standards" have been proposed by physiologists and chemists for daily dietaries of persons of differing age, sex and occupation, and in different conditions of life. In general these estimates have been based on two distinct methods of ascertaining the suitability of a ration. By the one, the quantities of food actually consumed by individuals or known groups of persons have been noted. The other method consists in determining, by special metabolism experiments, the actual physiologic demand for food. This furnishes information concerning the needs of man in maintaining a nutritive equilibrium under selected conditions of activity rather than what he would eat if given the freedom of choice. This method, being the more laborious and difficult mode of investigating dietary needs, has hitherto been employed less frequently in experimental inquiry than has the statistical method.

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[1] Evans, C. L.: The Effect of Glucose on the Gaseous Metabolism of the Isolated Mammalian Heart, Jour. Physiol., 1914, xlvii, 407.

On the basis of the former procedure, in which the proportions of foodstuffs assumed to be needed are inferred empirically from those consumed in observed cases, nearly all of the widely quoted dietary standards have been established. Any one who hopes to interpret or employ them rationally must bear certain fundamental principles of nutrition in mind. The requirements of the body in terms of food-fuel or energy depend on the way in which food is used to build the organism and repair its waste, and above all on its heat- and power-yielding quality, particularly through the activity of the musculature. Bearing these facts in mind, it is obvious that the size of an individual is one of the factors which determine the need of food. If vigorous growth is still in progress, the demand of nutrients for new tissue construction may become noteworthy. Chief, however, stand the variations of demand caused by the unlike expenditure of energy in different occupations. The sedentary bookkeeper or seamstress requires a far smaller supply of energy than the wood-chopper or the washerwoman. It is a customary assumption that, because of her smaller average stature and lesser muscular performance, a woman requires on the average eight-tenths as much food as a man for corresponding muscular activity. It has also been assumed that children of different ages consume from three-tenths to eight-tenths as much as the man of the family. Such generalizations have become necessary whenever the food habits of people have been investigated by the observation of food purchase or consumption in entire families.

We shall not go far amiss if we express the current dietary standards, so far as they are based on the preceding mode of estimating them for conditions prevailing in the United States, in terms of the results compiled by Dr. Langworthy of the United States Department of Agriculture, as follows:

Occupation of Head of Family	Fuel Value of Food per Man per Day, in Calories
Man at very hard work	6,000
Farmers, mechanics, etc.	3,425
Business men, students	3,285
Inmates of institutions, little or no work	2,600
Very poor persons, usually out of work	2,100

Without denying in any way the importance and great value of such indirect data, one may frankly designate them as rather inexact. For this reason it is still desirable to check up their indications, whenever possible, by direct measurements of the energy transformations. Numerous results already collected by this method of investigation have given no occasion to question the general validity of the "standards" set by the less accurate statistical method. The latest of such metabolism studies is of particular interest because it was conducted under the conditions of work that represent in some adequate way the daily muscular performances of the persons concerned.[1] The experiments were conducted in the large respiration apparatus of the physiologic institute at the University of Helsingfors in Finland, the carbon dioxid output of the subjects being determined during periods of rest and characteristic activity, and calculated into terms of energy consumed. Making an allowance of 10 per cent. for the alimentary waste of food the gross results were as follows:

Men	Calories per Day
Tailor	2,600-2,800
Bookbinder	3,000
Shoemaker	3,100
Metal-worker	3,400-3,500
Painter	3,500-3,600
Cabinetmaker	3,500-3,600
Stone-cutter	4,700-5,200
Wood-cutter	5,500-6,000
Women	
Seamstress (by hand)	2,000
Seamstress (sewing machine)	2,100-2,300
Bookbinder	2,100-2,300
Housemaid	2,500-3,200
Washerwoman	2,900-3,700

These interesting figures not only give an impressive confirmation of the energy standard derived by less direct methods of investigation, but also bring into immediate, clear relief the great differences that the various trades and occupations entail. Such facts need to be taken into consideration in institutions in which the inmates are assigned to work as unlike as bookkeeping or sewing on the one hand, and wood-chopping or other forms of hard manual labor on the other. Such figures show the obvious physiologic injustice of doling out equal portions of the same ration to all of these persons, especially when free choice is restricted or practically impossible. Furthermore, it should be noted that the data of the Finnish physiologists are based on an eight-hour working day. Any lengthening of this period must affect the expenditure here represented.

It is impossible to determine from the cursory studies that have been made whether the scale of living or "standard of life" is actually much higher here, as has been asserted by some, than it is in Europe. One American authority, the late Professor Atwater, frankly believed that, considering the body as a machine, the American workingman is more strongly built and has a larger fuel-supply than his European brother. While it is not absolutely proved, it seems in the highest degree probable that the higher standard of living, the better nutrition, the large product of labor and the higher wages go together. The justification for any propaganda in favor of more liberal standards for dietaries rests in a measure on the truth of this belief. And, speaking aside for the moment, a glance at the figures which we have quoted shows that the proverbial advice to "mind one's business and saw wood" entails no mediocre performance in terms of calories per day.

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[1] Becker, G., and Hamäläinen, J. W.: Untersuchungen über die Kohlensäureabgabe bei gewerblicher Arbeit, Skandin. Arch. f. Physiol., 1914, xxxi, 198.

SOME CONDITIONS INDUCING EXCESSIVE RESPIRATION

It has been pointed out by several investigators[1] that voluntary forced breathing in man may give rise to unpleasant and even alarming symptoms. The outcome apparently depends on a number of modifying factors. As a rule, in a short time after the forced breathing the subject either stops breathing altogether if his respiration is allowed to act involuntarily or he breathes in a very shallow and ineffective manner. Numbness and tingling in the hands and feet are reported to occur; and if the forced breathing has been of considerable duration — two or three minutes or longer — many subjects experience an oxygen want when the subsequent apnea sets in. The lips may turn blue; Cheyne-Stokes breathing may be initiated; and Henderson has called attention further to the occurrence of "light-headedness," polyuria, shivering, muscular weakness and other functional disturbances induced by prolonged forced breathing. He maintains that the symptoms evoked are similar to those of shock, and suggests that death from failure of respiration would probably result from vigorous voluntary hyperpnea for fifteen or twenty minutes.

There are various ways in which excessive respiration — hyperpnea — can be induced in man aside from the purely voluntary manner that has just been referred to. Pain is one of the natural stimuli calling forth hyperpnea. Anger, sorrow, fear and ether-excitement may induce a similar result. All of these phenomena may be attended or followed by what is sometimes spoken of as shock. Henderson, as is well known, has argued that the condition of shock which results in man from extreme physical suffering is, to a large extent, caused by the reduction of the carbon dioxid content of the blood and tissues as the result of the violent and prolonged hyperpnea caused by stimulation of afferent nerves. In contrast with this is the view that the ill effects produced by suffering are the expression of fatigue of the nervous system and of the heart, resulting from the intensity of the sensory irritations. This theory of the etiology of shock has been vigorously combated. We have no desire at this time to enter into a discussion of the nature of this much-debated subject. The underlying facts with respect to the physiologic effects of pain and ether, for example, on the respiration in man ought to be demonstrable quite independent of the interpretation which is put on the consequences thereof.

Hitherto much of the experimental work has been conducted on animals under conditions which approached extremes rarely found in man; or in the case of experiments on man the voluntary forced respiration has been somewhat unlike that which might arise in the exigencies of practice. Dr. A. L. Meyer of the University of Pennsylvania has approached the problem of hyperpnea and acapnia in its possible relation to "one of the most important symptom-complexes in medicine" by a direct study of the effect of moderate pain and of the incipient stage of anesthesia in man. In Haldane's laboratory at Oxford he determined the volume of air breathed, the respiratory exchange, and the alveolar carbon dioxid pressure on human subjects.[2] The device for securing experimentally the effect of moderate pain, the duration of which could be controlled, consisted in placing a clamp on the end of the little finger. This apparatus could be screwed down firmly and then released. The average pain was, according to the investigator, probably such as might be caused by a severe felon.

Pain of moderate intensity and short duration (two to three minutes) actually produces hyperpnea that can easily be measured. The alveolar carbon dioxid is diminished and the respiratory quotient increased. Ether in suitable low concentration produces hyperpnea in one minute. How vigorous it may become is illustrated by one case in which an air mixture containing 3.3 per cent. of ether produced an increase of 92 per cent. in the air respired; and on another occasion a mixture of 2 8 per cent. produced an augmentation of 66 per cent. The degree of excessive ventilation of the lungs varies in different persons; and with higher concentrations of ether the breathing is diminished. The alleged possibilities of inducing acapnic conditions in man are accordingly established.

Current Comment

GOING TO ATLANTIC CITY?

The Journal for May 16 contained a preliminary announcement of the program for the Scientific Assembly and detailed information with regard to hotel accommodations at that city of hotels—Atlantic City. Before the next issue of The Journal reaches its readers, many members and Fellows will be on their way to the meeting-place. If arrangements have not already been made there is still time to complete them and to take advantage of the session. The usual large attendance undoubtedly will be increased because of the hot weather which prevails, making Atlantic City especially attractive. Even apart from the interesting scientific program of the Sections, Fellows who go will be well repaid by meeting and exchanging ideas with professional brethren from all over the country, including the leaders and men in the forefront of investigation and research. Then, too, the setting of the meeting will be ideal: abundant comfortable hotel accommodations managed by men who are past masters in the art of providing for the comfort and pleasure of their guests, and the local profession who have always proved themselves gracious hosts and who have solved the problem of caring for heavy professional duties and at the same time greeting visiting physicians with a heartiness that assures all a welcome — all this has been the experience in the past, and Atlantic City improves every time the Association pays it a visit. It requires no gift of prophecy to foretell a delightful social good time, as well as a scientific treat. The Fellows who go to Atlantic City will work the better throughout the year for having thrown aside the routine and the demands of a busy practice for this short breathing-space.

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[1] Haldane and Poulton: Jour. Physiol., 1908, xxxvii, 390. Henderson, Yandell: Am. Jour. Physiol., 1909-10, xxv, 310; Respiratory Experiments on Man, The Journal A. M. A., April 11, 1914, p. 1133.

[2] Meyer, A. L.: Hyperpnoea as a Result of Pain and Ether in Man, Jour. Physiol., 1914, xlviii, 47.

THE SPREAD OF THE "SANE FOURTH" MOVEMENT

Probably at no time in the eleven years since The Journal began its agitation for a safe and sane Fourth has so much interest been manifest in such a number of cities so far in advance of our national holiday. Information from all over the country indicates that those cities in which our last year's report showed a high death- and accident-rate are bestirring themselves in the hope of preventing the repetition of last year's experience. As has been frequently pointed out, the city is directly responsible for the regulation of the Fourth and the prevention of the needless slaughter, maiming and blinding of children. Municipal ordinances are the only method by which this problem can be solved. In the report issued last August, The Journal showed that the total price in human life and suffering paid for the celebration of the Fourth of July during the past eleven years was 1,792 deaths and 39,488 injuries; that, although the number of injuries and fatalities had decreased during the past four years, the cities in which the old and barbarous methods of celebrating the Fourth were still followed, were maintaining or were even exceeding the records of previous years in the quota of deaths and injuries. Thus, while New York had reduced its record from 22 killed and 422 injured in 1907 to none killed and 65 injured in 1913, and Chicago during the same period had fallen from 16 killed and 151 injured in 1907 to 1 killed and 12 injured in 1913, Philadelphia, which had 7 killed and 248 injured in 1907, had 3 killed and 340 injured in 1913. What New York and Chicago have done, Philadelphia can do if she will. The death or injury of her children from Fourth of July accidents is a matter for which each city government is directly responsible. Other cities in which the number of killed and injured is still far too high are Pittsburgh, Cincinnati, Providence, R. I., Worcester, Mass., Syracuse, N. Y., Omaha, Neb., Grand Rapids, Mich., Hartford, Conn., Reading, Pa., Wilmington, Del., and Des Moines, Ia. The citizens of these cities would do well to demand from the city government, for the protection of their children, the passage of ordinances that will prohibit the sale of fireworks, and substitute for the former barbarous methods of celebration plans more in keeping with the day and the occasion which it commemorates.

TEACHING IN MUNICIPAL HOSPITALS

As we have remarked before,[1] a large hospital which does no more than care for the sick fulfils only a part of the function it owes to the community. It should contribute its share to medical education and research, and should therefore stand in such relation to a teaching institution as will permit the best possible use of the clinical material it affords. Many private hospitals and the state hospitals of Virginia, Michigan and Iowa have arranged such connections. We mentioned last week[2] that Yale Medical School, according to the terms of a gift made by the General Education Board of the Rockefeller Foundation, is called on to acquire control of the New Haven Hospital with its 260 beds. If the conditions of the gift are fulfilled, Yale will be the fifth medical school in this country to acquire control, by definite agreement, of the municipal hospital facilities in the community in which it is located. The Cincinnati Hospital with its 500 beds is utilized for clinical instruction by the College of Medicine of the University of Cincinnati. The medical department of the University of Georgia, by contract with the city of Augusta, has control in perpetuity of all the municipal hospitals now in existence or hereafter to be erected in that city. The medical department of the University of Louisville is able to make use of the clinical material afforded by the Louisville City Hospital with its 500 beds. The School of Medicine of Western Reserve University has control of the clinical facilities of the Cleveland City Hospital and St. Vincent's Charity Hospital, in addition to those afforded by private hospitals — in all, over 1,300 beds. In various other cities, the municipal hospital facilities are utilized for instruction to a greater or less extent under less formal arrangements. In marked contrast with such arrangements with hospitals elsewhere is the withholding from use in medical teaching of the abundance of splendid clinical material in the 1,700 beds in the great Cook County Hospital in Chicago. That the best interests of hospital patients are thus sacrificed is clear, since it has long been recognized that the highest standards of efficiency are found in those hospitals which are most closely related with high-grade medical schools. It is only through such relationships that the hospitals are kept in touch with the latest and best methods of diagnosis and treatment, since they aid in and get the benefits of the research work of the medical school. The public interests are likewise sacrificed in the lack of such a relationship, since one of the main functions of the hospital is not being exercised, namely, that of supplying material for the training of future nurses and doctors, who in turn would be stimulated to greater zeal in the recognition, treatment and prevention of diseases. It has repeatedly been shown that physicians are invariably more careful in their methods of diagnosis and treatment if they are being watched by a few bright, intelligent medical students. It is to be hoped that the closer relationships being established between private and municipal hospitals and leading medical schools elsewhere may point the way to similar relationships in Chicago and our other large cities.

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[1] The Educational Function of Hospitals, editorial, The Journal A. M. A., May 27, 1911, p. 1581.

[2] Medical News, The Journal A. M. A., June 6, 1914, p. 1816.

THE DOCTOR'S DILEMMA

The other day a physician of Duquoin, Ill., was shot to death because he refused to answer a call to the family of the murderer. Such, at least, is the newspaper report, and it is probably correct. The following morning the Chicago *Tribune*, under the caption "The Doctor's Dilemma," contained an editorial that is so sensible and recognizes the situation so well that we quote it entire:

> When a child becomes sick at night the first thing the anxious parents think of is the doctor. They have no hesitancy to wake him up before dawn. They will drag him out of the house before breakfast. The few minutes he takes to dress seem ages to them. If they could they would transport him on wings to their sick child's bedside.
>
> But just as the doctor is thought of first in illness, he is thought of last after the patient has recovered. Doctor bills are postponed to the last. In no profession or business is the amount of unpaid bills as great as in the medical profession. It is not surprising that a doctor now and then scorns a call from a family he has down on his list as "dead beats."
>
> For scorning a call from a family that had not paid him for services previously rendered, a physician was killed the other day by the irate head of this family. No doubt the slayer of the physician will try to defend his action on the ground of having been crazed by the sufferings of his child. But it will be a false defense. It was murder pure and simple. And the unreasonable attitude which the public takes toward the physician is in part responsible for it. We are too apt to forget that the doctor has rent to pay and grocer bills to meet.

OXFORD HONORS SURGEON-GENERAL GORGAS

By a peculiarly happy coincidence we are able to present, in connection with Surgeon-General Gorgas' paper, "Recommendation as to Sanitation Concerning Employees of the Mines on the Rand," facsimiles of two interesting documents. These are the copies, which Sir William Osler caused to be engrossed and illuminated on parchment, of the addresses made at Oxford when the honorary degree of Doctor of Science was conferred on Dr. Gorgas. The beautiful colors of the originals, however, must be left to the imagination. On page 1864 is a facsimile of the address of the public orator of Magdalen College, Oxford, on the presentation of Dr. Gorgas for the degree, together with an exact transcript of the translation which is engrossed on the same parchment. The latter, by the way, contains in the beautifully executed original, and hence in the transcript, a few easily recognizable typographical errors, evidently made by the artist who did the engrossing. On the opposite page is a facsimile of the address of the acting vice-chancellor, who, in admitting Surgeon-General Gorgas to the degree of Doctor of Science, addressed him as:

> Preeminently distinguished, sagacious, health-bringing, the modern Machaon of the American Army, whom indeed I should wish to salute not only in Latin prose but also in Greek verse thus:
>
> "Hail Router of the Plague of Flies! Hail Isthmian Conqueror true!
> Gorgas, to that wise Goddess dear, the Gorgon death who slew!"

There was a time, as these addresses remind us, when mighty works like those done at Panama would have been celebrated in heroic legend and epic verse; when the hero who freed one of the gateways of the world from a subtle and myriad-winged death would have been deemed to be directly inspired by the Goddess of Wisdom herself. Nay, more, his very name, as the acting vice-chancellor's charming Greek verses suggest, would have enshrined a mystery for the philologists of later days, who would have gravely shaken their puzzled heads as they endeavored to trace the undoubted connection or identity of the Isthmian Gorgas with the earlier Gorgon-slayer, the hero Perseus! To-day the "Epic of the Isthmus" waits for the poet who shall arise

> Chanting of order and right, and of foresight, warden of nations,
> Chanting of labor and craft and of wealth in the port and the garner.

Meanwhile, it is a source of national satisfaction to Americans to see the knowledge and skill that made possible the Panama Canal employed on similar tasks in Africa and honored in one of the great universities of England.

THE PSYCHOLOGY OF MARINE DISASTERS

With the great increase in size and speed of passenger steamers there has come no such diminution of risk of life as some of us perhaps anticipated. Indeed, when the carrying capacity is increased, the loss of life in each wreck or disaster is necessarily greater. Cellular sides and other ship-building safeguards are evidently no real insurance for ships against mortal injury, even when the perils of storm and speed are eliminated as they apparently were from the late St. Lawrence River disaster. Study of the personal factors in and the possible psychologic causes for these shipwrecks is therefore of chief importance. The rules of the road at sea are simple, and when two vessels, each pursuing a correct course, sight each other and a few minutes later, cut off by fog, come into collision, the inference is that some one has made a serious blunder. A wrong order or a right one misunderstood under such circumstances may have terrible consequences. Sometimes the order is unaccountably wrong, as in the case of the British battleship *Victoria* about ten years ago, but the disaster may also be the result of the careless or thoughtless misinterpretation of a correct order by the wheelsman, to whose hand the modern steering-gear so quickly and accurately responds. As the collision between the

Empress of Ireland and the collier *Storstad* occurred during a fog, the question of color-blindness does not come into consideration. It would seem that a thorough investigation by experts might reveal personal defects aside from the purely mental factor responsible for such occurrences. The question is not a new one; it has been generally and extensively discussed many times, but these repeated disasters should arouse a demand for a specific and thorough investigation of every possible factor.

Medical News

COLORADO

New Officers.—El Paso County Medical Society at Colorado Springs, May 17: president, Dr. Beverley Tucker; secretary-treasurer, Dr. Elmer L. Timmons, both of Colorado Springs.

After the Quacks.—The *Rocky Mountain News* is conducting a campaign against the quacks that infest Denver. It not only refuses their advertisements, but has been investigating their methods of doing business. As a counter proposition the quacks, it is stated, have been attempting to secure information on which to base charges of irregular practice against the members of the State Board of Medical Examiners. *The plan was to hire a detective to go to the physicians* of the state board soliciting treatment for diseases which he did not have. It is believed the publicity will act disastrously on the fraudulent business of the quacks. It is believed there is still room for improvement in the advertising matter carried by the *News*. The *Denver Express* has also announced its purpose to refuse medical advertisements of all kinds at the expiration of present contracts.

CONNECTICUT

Refuge for Cardiac Convalescents.—In July of last year a convalescent home was opened at Sharon, intended exclusively for patients suffering from heart disease or convalescing from acute attacks. In connection with this institution there is established a trade school for cardiac convalescents. The object of this philanthropic work is to provide an industry whereby these convalescents may earn a living, without incurring grave risk. Each workman is graded in accordance with the amount of work he may safely do, and this is increased as the crippled heart recovers. Rest rooms are provided, and there is constant medical supervision. The industry established at Sharon is the making of concrete flower-pots.

Yale Centennial.—At the commencement of Yale University, June 15-17, Yale Medical School will celebrate the one-hundredth anniversary of the first conferring of degrees. The occasion will be observed by special exercises at which addresses will be presented by Prof. William H. Howell of Johns Hopkins University and Dr. Walter R. Steiner of Hartford. On commencement day a number of honorary degrees will be conferred to commemorate the occasion. A life of Nathan Smith, one of the founders of the school, will be issued from the Yale University Press at about commencement time, and a memorial volume of medical papers, prepared under the editorship of Dr. Horst Oertel, and containing contributions from Drs. Graham Lusk, E. R. Baldwin, John Hartwell, C. W. Field, W. W. Herrick, Charles F. Craig, Samuel W. Williston and Horst Oertel, will appear as a special number of the *Archives of Internal Medicine*. It is hoped that the university will be able to announce at this time the consummation of the plan for affiliation with the New Haven Hospital and gifts to the endowment of the school.

ILLINOIS

Murdered by Non-Paying Patient.—Dr. D. Winton Dunn, formerly mayor of Duquoin, was shot six times by a coal-miner, June 6, and died as a result of his wounds while being taken to a hospital in St. Louis. The murderer is said to have stated his reason for the act was he owed Dr. Dunn a bill for professional services, and that Dr. Dunn had refused to make further calls until the bill was paid.

Alumni Elect.—At the annual meeting of the Alumni Association of the Northwestern University Medical School, held in Chicago, June 8, the following officers were elected: president, Dr. Frederic A. Besley, Chicago; vice-presidents, Drs. William H. Fitch, Rockford, and Edward Von Hess, Chicago; secretary, Dr. Arthur B. Eustace (reelected); treasurer, Dr. Leo G. Gwan (reelected); and necrologist, Dr. Samuel C. Stanton.

State to Make Wassermann Test.—The governor has approved plans laid before him by Dr. C. St. Clair Drake, secretary of the State Board of Health, for the material extension of the laboratory department of the board. It is announced that the Wassermann blood-test will be made free of charge for indigent patients, and that microscopic examinations of cultures in cases of diphtheria will also be made under the same conditions.

Personal.—Dr. Lee O. Scott, Rockford, is reported to be critically ill.——Dr. Charles E. Cole, Jacksonville, sailed for Europe June 9.——Dr. Charles H. Bacon, Lockport, is reported to be critically ill in St. Joseph's Hospital, Joliet.——Drs. Frederick E. Roberg, Joliet, and Oscar T. Roberg, Chicago, have sailed for Europe, for a tour of the world.——Dr. Walter C. Jones has been reelected president, and Dr. Ernest J. Ford reelected treasurer of the Evanston Tuberculosis Institute.——Dr. Oscar P. Harris, Mendota, has opened a hospital in that city.——Dr. Gustav F. Ruediger has been elected health commissioner, and Dr. Oric C. Yoder, Peru, assistant health commissioner, of La Salle.

Chicago

Memorial to Fenger.—The Danes of Chicago, at a meeting, June 7, adopted a resolution endorsed by the Danish National Committee, requesting that a memorial tablet to Dr. Christian Fenger, for many years chief of the surgical staff of the Cook County Hospital, be placed in the new County Hospital.

Personal.—Dr. Lewis L. McArthur, who has been seriously ill at his home, is reported to be convalescing.——Dr. Peter S. Winner has been appointed physician of the State Penitentiary at Joliet, vice Dr. John P. Benson.——Drs. Peter J. Latz and Adolph Hartung have sailed for Europe.——Dr. Isaac J. K. Golden fractured his left arm and sustained other injuries, June 3, in a collision between his motor-car and an auto-truck.——Dr. Francis W. McNamara has been appointed county jail physician, vice Dr. Thomas J. Hogan.

KANSAS

Summer School.—The School of Medicine of the University of Kansas held its fourth annual summer school for physicians and health officers, under the auspices of the Kansas State Board of Health and the School of Medicine, at Bell Memorial Hospital, Rosedale, June 8-13, inclusive. The work of the school included clinical and laboratory work, and discussions of public health problems. Each day a round-table conference for health officers was conducted by Dr. R. J. Crumbine, secretary of the State Board of Health. The entire course was free to any licensed physician, student of medicine, or legal practitioner of the state.

MARYLAND

Anniversary of John Hopkins Hospital.—The twenty-fifth anniversary of the opening of Johns Hopkins Hospital, Baltimore, will be celebrated with appropriate exercises the first week in October. The preliminary program provides for addresses and papers by a number of well-known clinicians and teachers, as well as by graduates of the Johns Hopkins Medical School.

Personal.—Dr. Philip Briscoe, Mutual, has been elected president of the State Board of Aids and Charities. The board has named a committee to study the question of cooperative purchasing by the institutions which receive state aid, of which Dr. J. H. Mason Knox, Baltimore, is a member.——Dr. Nathan R. Gorter, the Commissioner of Health, has appointed Dr. Alexander J. Gillis assistant superintendent of Sydenham Hospital, to succeed Dr. Walter W. Point, Jr., Baltimore.——Dr. Gustav H. Woltereck has been appointed throat inspector in place of Dr. Wilbur P. Stubbs, recently named as a medical examiner of schools.——Dr. Adolf Meyer, Baltimore, has been appointed a member of the board of managers of the Maryland Training School for Girls.——Dr. Ralph R. Browning, Myersville, has been elected health officer of Frederick County, vice Dr. James M. Goodman, Frederick.——Dr. A. Lee Hichew has been appointed medical supervisor of the Franklin Square Hospital, Baltimore, to succeed Dr. G. S. La Wall.

MASSACHUSETTS

Trachoma in Boston.—Two steerage passengers suffering from trachoma were found on the steamship *Caledonia* which arrived in Boston from Manchester, May 28, and three passengers with the same disease were found on the steamship *Michigan* which arrived at Boston from Liverpool on the same day. All the afflicted passengers were Syrians.

Tufts Alumni Elect.—At the twenty-first annual meeting and banquet of the Alumni Association of Tufts Medical School, Boston, the dean, Dr. Charles F. Painter, was the guest of honor and principal speaker. The following officers were elected: president, Dr. Herbert A. Donnell, Medford; vice-presidents, Drs. Bessie D. Davis, Cambridge, Russell B. Sprague, Boston, Anna O. Sullivan, and Isador H. Coriat, Boston; secretary, Dr. Andrew P. Cornwall, Boston, and treasurer, Dr. James F. Coupal, Boston.

MICHIGAN

New Officers.—Detroit Oto-Laryngological Society, May 26: president, Dr. Emil Amberg; secretary-treasurer, Dr. Charles L. Chambers.

Automobile Manufacturer to Build Hospital.—In a letter to the directors of the Detroit General Hospital, Henry Ford announces his willingness to take over the property on West Grand Boulevard, to complete the work, and to provide Detroit with a first-class hospital. This entails an expenditure of $3,000,000, and Mr. Ford agrees to repay every subscription that has been made toward the building fund of the hospital.

Half a Million for Hospital.—On May 18, in the presence of the members of the medical fraternity and the board of directors of the Union Benevolent Association Hospital, Mr. John W. Blodgett turned the first spadeful of earth for the excavations of the new U. B. A. Hospital, the gift of Mr. Blodgett. The specifications call for a concrete building, and the contract has been awarded for $559,000, the building to be completed by December 15.

New Medical Society.—At a banquet given by the Bay County Medical Society, May 18, the first steps were taken toward the formation of the Saginaw Valley Academy of Medicine, and a committee consisting of Drs. James W. McMeckin, James D. Bruce and Henry J. Meyer, Saginaw; John W. Hauxhurst, Frank E. Ruggles and W. G. Kelley, Bay City; and Knapp, Herbert E. Randall and Robert D. Scott Flint, was appointed to work out plans for organization.

Personal.—Dr. Joseph J. Noeker, Detroit, is reported to be seriously ill with tuberculosis at his home.——Dr. Charles E. Boys, Kalamazoo, left for Europe, June 1.——Dr. James T. Case, Battle Creek, has been made a member of the X-Ray Society of Germany.——Dr. John H. Kellogg, Battle Creek, has received a gold medal and diploma from the University of Italy, Palermo.——Jackson County Medical Association gave an informal reception and supper at Jackson in honor of Dr. Nathan H. Williams, who is moving to California.——Dr. Harry W. Long, Escanaba, sails for Europe this month.

To Celebrate Semi-Centennial.—Medical men of Detroit met in the Wayne County Medical Society's banquet hall, May 19, to commemorate the half-century of professional life of Dr. Charles Douglas. Dr. J. Henry Carstens was toastmaster and speeches were given on the various phases of the personal and professional life of Dr. Douglas. Dr. Angus McLean spoke on Dr. Douglas as "The Man," Dr. Arthur D. Holmes as "The Pediatrician," Dr. John E. Clark as "The Teacher," Dr. Daniel La Ferte as "The Colleague," Dr. Eugene Smith as "The Family Doctor." Dr. N. L. Hooker responded to the toast: "Dr. Douglas and the Young Doctor," and Dr. Douglas spoke on "Our Guest, By Himself." After the banquet, Dr. Douglas was presented with a gilt-ivory clock, suitably inscribed.

NEVADA

Hospital Opens.—Mount Rose Hospital, Reno, was opened May 22. The building is well located and fully equipped, and is under the charge of Miss Higerty, formerly nurse in St. Mary's Hospital, Reno.

Personal.—Dr. and Mrs. John E. Pickard, Reno, have started for Europe.——Dr. Harry G. Knapp, Fairview, has located at Wonder.——Dr. John C. Kitchen, Aurora, has severed his relations with the Aurora Mining Company, and has been succeeded by Dr. John B. Edwards, Mason.——Dr. William N. Burdick, Goldfield, has moved to Arizona.——Dr. Ora B. Dunham, Goldfield, has moved to San Diego, Cal.——Dr. Henry D. Hargrave, Reno, has returned to his old home in Toronto, Ont.——Dr. John L. Robison, Reno, has started for Europe.

NEW YORK

New Officers.—Washington County Medical Society at Whitehall, May 20: president, Dr. Willis A. Tenney, Granville; secretary, Dr. Silas J. Banker, Fort Edward.——Saratoga Springs Medical Society at Saratoga Lake, May 23: president, Dr. Fred J. Resseguie; secretary-treasurer, Dr. Miles E. Van Aernem.

Buffalo Alumni Meet.—The thirty-ninth annual meeting of the Alumni Association of the University of Buffalo was held June 2-5. On June 2, 3 and 4, the Harrington lectures on "Recent Advances in Pathological Anatomy" were delivered by Prof. Ludwig Pick, of the University of Berlin, Germany. On June 4, the first hour was given to memorial exercises in honor of Drs. Roswell Park and Frederick C. Busch. On June 5, the commencement exercises were held.

Scarlet Fever Epidemic at Auburn.—The epidemic of scarlet fever in the Auburn prison has reached large proportions. It is said that thus far in the inspection more than 1,000 inmates have shown signs of infection. The epidemic started in the women's prison but has spread to the men's as well. There are very few ill enough to be confined to bed. The prison contains no hospital accommodations for a general epidemic and the isolation of suspects is impossible.

Personal.—Dr. Harry S. Bernstein, director of the Bender Hygienic Laboratory at Albany has been appointed pathologist and bacteriologist to the Rhode Island Board of Health and will assume his new duties September 1.——Dean Willis G. Tucker, at the annual dinner of the alumni of Albany Medical College, held May 26, was presented with a silver loving-cup in recognition of his services as registrar of the college for 32 years, from which position he retired on January 1 last.

Club House for Physicians.—The Rochester Medical Society has purchased the property at 33 Chester Street and will alter it and fit it up for a club-house. The purchase price was $35,000, of which $18,000 has already been subscribed by local practitioners. It is expected that the building will be ready by September. Dr. William B. Jones is president; Dr. Frank F. Dow, vice-president; Dr. David B. Jewett, secretary, and Dr. Wesley T. Mulligan, treasurer of the board of directors.

New York City

Personal.—Dr. Robert Abrahams has been elected president of the board of managers of the Manhattan State Hospital, Ward's Island.——Dr. Charles F. Bolduan has been appointed head of the new Bureau of Public Health Education, of the Department of Health.——Dr. L. Emmett Holt has been appointed consulting pediatrician of the Department of Health.

Baby Week Planned.—The Department of Health, with the approval of Mayor Mitchel, is laying plans to keep one week in June as "Baby Week." It is proposed during that time to interest everyone in the public and private agencies which care for babies during the summer months and are assisting in the effort to lower the infant mortality. It is pointed out that the death-rate of infants in New York City has been reduced during the last seven years from 135.8 per 1,000 to 101.9 and that a still lower rate is possible.

Annual Memorial Meeting.—The memorial meeting of the Kings County Medical Society was held at their headquarters, May 31. The roll-call of the deceased members was as follows: Drs. George R. Westbrook, Robert E. Moore, John R. Stivers, Albert T. Birdsall, George Drury, Stanley MacGillvary, George McNaughton, Eugene F. Pearce, Edward W. Carhart, Jesse W. Henry, M. J. Leland, William H. Clowminzer, James L. Watt, Henry C. Turner, Norman E. Farewell, Francis M. Burke, Francis S. Kennedy, Annie M. Brown, and Daniel W. Woolley.

Vaccination Law Upheld.—Some time since Haghard Eckerbold, a resident of the Bronx, was fined five dollars for violation of the compulsory education law, as he had refused to have his child vaccinated and the authorities would not permit the child to attend school under those circumstances. The court of apppeals has affirmed the judgment of the lower courts holding that the laws requiring vaccination as a condition of attending public schools were not so unusual or oppressive as to excuse the defendant's act. The court also referred to the fact that the United States supreme court recently held constitutional a statute compelling vaccination.

Mikveh Baths.—A conference was recently called by Dr. Sigismund S. Goldwater, Commissioner of Health, to consider the matter of the "Mikveh" baths or cleansing pools whose regular use is required by the Jewish faith. An independent bacteriologic investigation conducted by Dr. George Mannheimer of Columbia University has shown that as at present conducted these baths are a menace to the health of those using them and points out the need of steps to render them sanitary. The problem has been presented to the Board of Authoritative Rabbis with the request that they suggest plans for making the baths sanitary to the Health Department in the near future.

New Appointments at Columbia.—The trustees of Columbia University at their meeting, June 1, appointed Dr. Warfield T. Longcope Bard, professor of the practice of medicine to succeed Dr. Theodore C. Janeway. Professor Longcope was also nominated medical director of the Presbyterian Hospital. The department of therapeutics has been merged with that of clinical medicine and Dean Samuel W. Lambert, formerly professor of therapeutics, has been appointed professor of clinical medicine. Dr. Charles C. Lieb has been appointed assistant professor of a new department of pharmacology and Dr. William Darrach has been appointed assistant professor of surgery. A gift of $2,400 from various donors has been presented for a scholarship at the College of Physicians and Surgeons in memory of the late Frank A. Hartley.

Urges Health Work on Life Insurance Companies.—At the meeting of the Association of Life Insurance presidents held in this city, June 5, Dr. Louis I. Dublin, statistician of the Metropolitan Life Insurance Company, presented figures showing that while the death-rate throughout the country has been lowered, the amount of illness has not been lessened to any appreciable degree. He estimates that the annual losses from preventable illness in the United States is $1,000,000,000 annually. The next twenty years must see our efforts directed to the control of disease and for this reason he urged the passage of a bill drafted by the state health officers at a conference in 1913 to insure complete reports of diseases. It was urged that the life insurance companies should assist by having this bill put on the statute books of the states by cooperating with committees appointed for the purpose by the American Medical Association and the American Public Health Association.

NORTH CAROLINA

Personal.—Dr. William E. Earley, Marietta, has been appointed United States Consul to Leicester, England.——Dr. Hugh E. Bowman, Biscoe, has moved to Aberdeen.

District Society Meeting.—At the semi-annual meeting of the Second District Medical Society at New Berne, N. C., May 26, Dr. William E. Warren, Winston, was reelected president, and Dr. Kemp P. B. Bonner, Morehead, secretary.

Medical School will No Longer Confer Degrees.—At the commencement of Shaw University Medical School (Leonard Medical School, Raleigh), May 13, the announcement was made that, beginning with the next session, the university would give only the first two years of the medical course and would cease to confer medical degrees.

State Association Meeting.—The sixty-first annual meeting of the Medical Society of the State of North Carolina will be held in Raleigh, June 16-18, under the presidency of Dr. J. James M. Parrott, Kinston.——The North Carolina Public Health Officers Association will hold its fourth annual meeting at Raleigh, June 15, under the presidency of Dr. J. M. Cooper, Clinton.

Hospital Notes.—Plans have been completed and construction work will shortly begin on the new Catholic hospital in Charlotte. The central portion will accommodate forty patients, but the plans call for the construction of additional units which will afford space for 100 patients.——A 10-acre site in Gastonia has been offered the directors of the recently chartered Orthopedic Hospital as a site for the proposed institution by the Rev. A. T. Lindsay, president of Linwood College, Gastonia.

OKLAHOMA

Meeting of Colored Physicians.—The Oklahoma Medical, Dental and Pharmaceutical Association, an organization of colored men, held its annual meeting at Tulsa, recently. Dr. W. B. Humphrey, Sapulpa, was elected president. The next meeting will be held in Wewoka.

Personal.—Dr. Dumont W. Howell, Nowata, who recently sustained a fracture of the thigh, is convalescent and will soon leave the hospital at Kansas City.——Dr. Franklin G. Trigg, Lovell, was assulted recently, and his left index finger bitten off.——Dr. Robert L. Rhodes, Tulsa, has been appointed physician of Tulsa County, vice Dr. James E Webb, resigned, to become city physician of Tulsa.——Dr. Roy K. Goddard, Supply, has been appointed assistant superintendent of the Supply State Hospital.

OREGON

New Officers.—Clackamas County Medical Association at Oregon City, May 28: president, Dr. John W. Norris; secretary-treasurer, Dr. Carl H. Meissner, both of Oregon City.

Alumni Reunion.—At the alumni reunion of the University of Oregon, clinics and laboratory demonstrations were held on June 2, 3 and 4. The annual business meeting and banquet of the association were held June 2 at the Multonomah Hotel, Portland.

Personal.—Dr. David N. Roberg, Portland, as a representative of the State Board of Health, is making a study of plague conditions in the Orient.——Dr. Charles W. Tidball, Portland, has been awarded a bronze medal and $1,000 in money by the Carnegie Hero Foundation, for his rescue of a woman from drowning in Independence River, Mo., in 1911.——Dr. Thomas J. Higgins, Baker, has been appointed as a member of the State Board of Health, vice Dr. Charles J. Smith, Portland.

PENNSYLVANIA

Hospital Dedicated.—The new building of the Monongahela Memorial Hospital was dedicated, May 30, with appropriate ceremonies.

New Officers.—At the meeting of the Pittsburgh College of Physicians, held May 27, the following officers were elected: president, Dr. Thomas W. Grayson, Pittsburgh; vice-president, Dr. Dewitt B. Nettleton, Sewickley; secretary, Dr. George A. Holliday, Pittsburgh, and treasurer, Dr. Curtis C. Mechling, Pittsburgh.

Commencement Week Clinic.—The School of Medicine of the University of Pittsburgh has arranged a clinical program in connection with the exercises of commencement week. Special clinics will be held in hospitals affiliated with the university, and laboratory demonstrations in the buildings on the university campus.

Save Children's Eyes.—Under a new state law all cases of ophthalmia neonatorum must be reported to the Bureau of Health. The law requires that any midwife or nurse, or any other person having the care of an infant whose eyes become inflamed or swollen, or reddened any time after two weeks after birth, shall report the same in writing to the health authorities within six hours.

Personal.—Dr. W. Knowles Evans, Chester, has been appointed superintendent of the new Health Department, made possible by the Clark act.——Dr. George G. Gill, assistant physician at the Hillside Home, Scranton, has resigned and will practice at Butler, N. J.——Dr. Gregg A. Dillinger, Pittsburgh, has been appointed chairman of the Public Safety Committee of Council as a member of the Public Morals Bureau.——Dr. W. Knowles Evans has been elected supervisor of the Health Department of Chester.

Railroad Accidents.—The accidents division of the public service commission, issued its report for the first quarter of 1914, May 31, which shows that 262 persons were killed on the steam railroads of the state and 2,480 injured. This is a decrease of 18 in the number of fatalities compared with the same period of last year, and a decrease of 2 as to the number injured. There were 29 killed on street railways and 725 injured. Those fatally injured on the railroads were 98 employees, 2 passengers and 146 trespassers. Those killed on street railways were 4 employees, 1 passenger, 3 trespassers and 21 others.

Philadelphia

Alumni Reunion.—The annual reunion of the Alumni Society of Philadelphia of the Medical Department of the University of Pennsylvania, was held at Glenrock Park, N. J., June 4.

Alumni Elect.—At the annual meeting of the Alumni Association of the Jefferson Medical College, June 5, the following officers were elected: president, Dr. Francis T. Stewart; vice-presidents, Drs. J. Coles Brick, John H. Gibbon, E. Q. Thornton, P. Brooke Bland; corresponding secretary, Dr. Elmer H. Funk; recording secretary, Dr. Walter S. Lucas, and treasurer, Dr. Warren B. Davis, all of Philadelphia.

Model Homes.—Plans for the erection of a group of model dwellings in Kensington, were announced June 4, by the Octavia Hill Association. The new dwellings will be build of brick, two stories high and will be so arranged that families will be able to rent two rooms for $6.50, three rooms and a bath for $10 and a separate house of four rooms for $13 a month. These houses will be arranged around an area of nearly one-third of an acre, and this open space will be filled up as a playground.

College Commencements.—The sixty-second annual commencement of the Women's Medical College of Pennsylvania was held June 2, eighteen women receiving the degree of Doctor of Medicine.——The thirty-fourth annual commencement of the Medico-Chirurgical College was held June 5, and seventy-five men received the degree of Doctor of Medicine.——The eighty-ninth annual commencement of Jefferson Medical College was held at the Academy of Music, June 6, when 147 men received the degree of Doctor of Medicine.

Personal.—Dr. Henry W. Rihl celebrated his 91st birthday anniversary at his home in Germantown, June 2.——Dr. S. W. Newmayer has been appointed assistant to the chief medical inspector of the Department of Health, to succeed Dr. Charles A. Groff, resigned.——Dr. James M. Anders has been appointed a member of the Board of Health of Philadelphia, to succeed Dr. Charles H. Andrus, Chestnut Hill.——Drs. William H. Walsh and Leonard D. Frescoln have qualified for the $4,000 post of resident physician of the Philadelphia General Hospital.

Alumnae Association Meeting.—The thirty-ninth annual meeting of the Alumnae Association of the Women's Medical College of Pennsylvania, was held June 2. Dr. Elizabeth L. Peck was elected president, Drs. Marie L. Bauer and Frances C. Vangaskin were elected vice-presidents, and the following officers were reelected: Dr. Jacobina S. Reddie, recording secretary; Dr. Mary Buchanan, corresponding secretary, and Dr. Ella C. Potter, treasurer. Announcement was made of a number of special gifts to the college, including a fellowship fund of $500 to be awarded annually for postgraduate work to a student showing special ability in teaching. The reception and banquet were held at the Bellevue Stratford in the evening.

Babies Emergency Bureau.—A central bureau has been established at City Hall by the Public Health Association, which affords advice, aid and directs personal relief to all mothers who wish to call on it. If the baby is sick, if it needs physician's attention, if a trained nurse's services are required, the mother has only to call up Electrical Bureau, 91, day or night and consult the child experts in charge. The office is in Room 714 of City Hall, and Miss Gertrude Rhoads is the executive secretary. Every nurse, every dispensary, every asylum, every hospital, every charity and welfare association in the city that has anything to do with babies, even clubs, churches, insurance companies have banded together in the Babies' Welfare Association, and place their resources at its command.

TENNESSEE

Hospital Opens.—The new Children's Hospital, on the grounds of the City Hospital, Memphis, which was recently built at a cost of $15,000, was formally opened for a public reception, May 25.

New Officers of State Board.—Dr. Rufus E. Fort, Nashville, was reelected president, and Dr. Andrew M. Gamble, Maryville, was elected vice-president of the board, which also elected Dr. Vincent A. Biggs, Martin, a member of the State Board of Embalmers.

Personal.—Dr. J. McChesney Hogshead has been appointed chief of staff of Erlanger Hospital, Chattanooga, succeeding Dr. John S. Dye.——Dr. Robert Mann, Memphis, who was stricken with appendicitis while operating for that condition in the Baptist Memorial Hospital recently, is making good progress toward recovery.

Tropical Dysentery.—Ten patients in three families at Erlanger, Chattanooga, suffered from a form of dysentery which was found after considerable investigation to be due to the bacillus of Shiga. This infection is unusual in this climate but is frequent in tropical countries and is fatal in from 7 to 20 per cent. of cases. The diagnosis was confirmed by experts.

New Officers.—East Tennessee Medical Association at Harriman, May 21 and 22: president, Dr. George P. Zirkle, Kingston; secretary-treasurer, Dr. Hiller P. Larimore, Chattanooga (reelected). The next semi-annual meeting will be held at Rogersville, and the annual meeting in Athens in May of next year.——Middle Tennessee Medical Association at Bellbuckle, May 22: president, Dr. Otey J. Porter, Columbia; secretary-treasurer, Dr. Roy W. Billington, Nashville.

VIRGINIA

State Sanatorium Completed.—The State Board of Health announces that the new infirmary building at Catawba has been completed and occupied, and that from now on the board will be able to admit suitable cases to the sanatorium without delay.

Northern Neck Physicians Meet.—At the semi-annual meeting of the Medical Association of the Northern Neck, held at Heathsville, May 28, Dr. Robert E. Booker, Lottsburg, was elected president; Dr. Stonewall Rice, Heathsville, vice-president; and Dr. Robert O. Lyell, Warsaw, secretary and treasurer.

Personal.—The address to the graduating class of the Medical College of Virginia was delivered by Dr. John A. Ferrall, secretary of the North Carolina State Medical Society, on "Health Work as a Career."——Dr. Southgate Leigh, Norfolk, has been appointed a member of the Virginia State Board of Medical Examiners, vice Dr. Herbert Old, removed to Philadelphia.——Dr. J. Allison Hodges, Richmond, delivered the address to the graduating class of the Louisburg, N. C., Female College, May 28. The subject of the address was "Conservation of Nerves."——Dr. A. S. Priddy, Lynchburg, president of the State Epileptic Colony, has been elected president of the National Association for the Care, Study and Treatment of Epilepsy.

The Problem of the Feeble-Minded.—Plans to investigate the feeble-minded in the State of Virginia, authorized by the last General Assembly, were discussed by the State Board of Charities and Corrections at its meeting, May 14. The legislative appropriation provides $3,000 for two years, and the board is directed fully to investigate, determine plans for remedy, and to report to the next General Assembly. The investigation will first deal with feeble mentality and the criminal population, to establish the relation between criminality and feeble-mindedness; it will then turn on feeble-mindedness in the community, and will finally take up the solution of the problem either by segregation or by confinement in institutions.

GENERAL NEWS

Pennsylvania Alumni Smoker.—The Society of the Alumni of the Medical Department of the University of Pennsylvania announces that the smoker will be held in the Rathskeller of the Hotel Alamac, Atlantic City, on the evening of June 23.

Indian Service Physicians' Conference.—The Commissioners of the Indian Service of the Department of the Interior have called a conference of physicians in the Indian Service. It will be held at the Lapwai (Idaho) Indian Sanatorium, June 23-25, and disease conditions among Indians will be discussed.

Clinical Day for Orthopedists.—Clinical Day for the twenty-eighth annual meeting of the American Orthopedic Association will be held in Philadelphia, June 17, at the hospital of the University of Pennsylvania. Clinics will be given in the morning and afternoon, luncheon will be served at Houston Hall, and in the evening there will be a boatride on the Delaware River and supper at the Yacht Club.

Leper in Washington.—John R. Early, about whose status as a leper medical experts have disagreed for five years, and who escaped from the Diamond Head Leper Station near Port Townsend, Wash., May 18, was discovered at a fashionable hotel in Washington, June 2, and was returned to his old place of isolation near the city limits. The federal health authorities have asked the Honolulu Board of Health for permission to send Early to Molokai.

New England Alumni of Jefferson Medical College Meet.—The New England Association of Jefferson Medical College Alumni held its annual meeting in Boston, May 28, and elected the following officers: president, Dr. Patrick F. Gahan, Medford, Mass.; vice-president, Dr. Thomas J. Fitzmaurice, Bangor, Me.; secretary, Dr. Wallace P. MacCallum, Boston; and treasurer, Dr. Frank I. Payne, Westerly, R. I. It was voted to hold the next meeting in Providence.

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LONDON LETTER

London, May 22, 1914.

Imperial Health Conference

The Imperial Health Conference, organized by the Victoria League for the promotion of knowledge of house and town planning and the care of child life throughout the empire, was opened at the Imperial Institute by Mr. Lewis Harcourt, secretary of state for the colonies. About 300 delegates, representing the governments of the various colonies, as well as local authorities and organizations throughout the United Kingdom, were present. In his address Mr. Harcourt said that the great difficulty which confronted the work of housing reform in this country was the congestion of population in the hearts of the towns. The last word in town-planning rested with Australia, which was entering on the building of a federal capital. It was their boast that during the past nine years the rates of West African invalidity had been reduced from 56 to 25 per thousand. The conference adjourned for the purpose of attending the opening of the Victoria League health exhibition, which was also held in the Imperial Institute. It embraced two classes of exhibits. One dealt with town planning, which was illustrated by plans and photographs of various garden city and housing schemes relating to the United Kingdom and many of the oversea dominions. The other section dealt with the welfare of children from babyhood to maturity, illustrated by exhibits relating to the treatment of children in all parts of the empire, in health and sickness, at work, at school, at play and asleep.

Royal Commission on Venereal Diseases

At the thirty-third meeting of the Royal Commission on Venereal Diseases, evidence was given by Sir Herbert Smalley, M.D., one of the commissioners of prisons. He said that it was his firm impression, and also that of many of the senior medical officers of prisons, that venereal diseases were less prevalent in prisons than thirty and even twenty years ago, and that the cases were less severe in character. He was inclined to think, however, that the later stages of syphilis affecting the circulatory and nervous systems were more prevalent. Under 2 per cent. of prisoners presented manifest symptoms of either gonorrhea or syphilis. The highest incidence occurred among prisoners committed from large towns and manufacturing or mining districts, and cases of venereal disease were disproportionately numerous in prisons receiving prisoners from seaport towns. About half of those suffering from venereal disease were still in an infectious condition when discharged. This problem might be attacked either by detention, notification or by the provision of facilities for treatment subsequent to discharge. The first alternative was of doubtful expediency, and any form of notification other than that which was made applicable to the whole community would be inadvisable. The idea of a prisoner being specially penalized or of his sentence being enhanced on account of venereal disease would, he thought, be strenuously resisted. He was not in favor of venereal disease being made notifiable generally throughout the community. The provision of facilities for treatment seemed to offer a more hopeful solution. Means should be provided throughout the country for treatment of venereal disease free of cost, readily accessible, and with attendance permissible in the evening so as not to interfere with the daily work of the patient. As far as possible these centers should be at general hospitals and dispensaries rather than at special hospitals or centers solely for the treatment of venereal diseases. If such centers were organized it would enable a prison doctor to give a discharged prisoner a ticket, the presentation of which at a center would secure the patient a continuance of treatment. The fact of the patient being recently discharged from prison should be a confidential matter and should be made known at the treatment center to as few persons as possible. In convict prisons out of 1,755 male convicts 299, or 17 per cent., showed signs of having had syphilis.

Government Report on Sleeping-Sickness

The report on sleeping-sickness has been issued by the Interdepartmental Committee, which has been investigating the part played by wild animals and the tsetse-fly in Africa in the spread of the disease and has been considering whether or not it is advisable to attempt the extermination of wild animals, either generally or in a special area, and whether or not any other measures should be taken to check the of Columbia was held in Manassas, Va., May 20. The following officers were elected: president, Dr. William P. Carr, Washington; vice-presidents, Drs. John D. Thomas, Washington, and William F. Merchant, Manassas; recording secretary, Dr. Thomas A. Groover, Washington; corresponding secretary, Dr. Joseph D. Rogers, Washington; and treasurer, Dr. William I. Robey, Herndon.

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London, May 22, 1914.

Imperial Health Conference

The Imperial Health Conference, organized by the Victoria League for the promotion of knowledge of house and town planning and the care of child life throughout the empire, was opened at the Imperial Institute by Mr. Lewis Harcourt, secretary of state for the colonies. About 300 delegates, representing the governments of the various colonies, as well as local authorities and organizations throughout the United Kingdom, were present. In his address Mr. Harcourt said that the great difficulty which confronted the work of housing reform in this country was the congestion of population in the hearts of the towns. The last word in town-planning rested with Australia, which was entering on the building of a federal capital. It was their boast that during the past nine years the rates of West African invalidity had been reduced from 56 to 25 per thousand. The conference adjourned for the purpose of attending the opening of the Victoria League health exhibition, which was also held in the Imperial Institute. It embraced two classes of exhibits. One dealt with town planning, which was illustrated by plans and photographs of various garden city and housing schemes relating to the United Kingdom and many of the oversea dominions. The other section dealt with the welfare of children from babyhood to maturity, illustrated by exhibits relating to the treatment of children in all parts of the empire, in health and sickness, at work, at school, at play and asleep.

Royal Commission on Venereal Diseases

At the thirty-third meeting of the Royal Commission on Venereal Diseases, evidence was given by Sir Herbert Smalley, M.D., one of the commissioners of prisons. He said that it was his firm impression, and also that of many of the senior medical officers of prisons, that venereal diseases were less prevalent in prisons than thirty and even twenty years ago, and that the cases were less severe in character. He was inclined to think, however, that the later stages of syphilis affecting the circulatory and nervous systems were more prevalent. Under 2 per cent. of prisoners presented manifest symptoms of either gonorrhea or syphilis. The highest incidence occurred among prisoners committed from large towns and manufacturing or mining districts, and cases of venereal disease were disproportionately numerous in prisons receiving prisoners from seaport towns. About half of those suffering from venereal disease were still in an infectious condition when discharged. This problem might be attacked either by detention, notification or by the provision of facilities for treatment subsequent to discharge. The first alternative was of doubtful expediency, and any form of notification other than that which was made applicable to the whole community would be inadvisable. The idea of a prisoner being specially penalized or of his sentence being enhanced on account of venereal disease would, he thought, be strenuously resisted. He was not in favor of venereal disease being made notifiable generally throughout the community. The provision of facilities for treatment seemed to offer a more hopeful solution. Means should be provided throughout the country for treatment of venereal disease free of cost, readily accessible, and with attendance permissible in the evening so as not to interfere with the daily work of the patient. As far as possible these centers should be at general hospitals and dispensaries rather than at special hospitals or centers solely for the treatment of venereal diseases. If such centers were organized it would enable a prison doctor to give a discharged prisoner a ticket, the presentation of which at a center would secure the patient a continuance of treatment. The fact of the patient being recently discharged from prison should be a confidential matter and should be made known at the treatment center to as few persons as possible. In convict prisons out of 1,755 male convicts 299, or 17 per cent., showed signs of having had syphilis.

Government Report on Sleeping-Sickness

The report on sleeping-sickness has been issued by the Interdepartmental Committee, which has been investigating the part played by wild animals and the tsetse-fly in Africa in the spread of the disease and has been considering whether or not it is advisable to attempt the extermination of wild animals, either generally or in a special area, and whether or not any other measures should be taken to check the disease. The committee finds that there are two distinct forms of sleeping-sickness. There is the Uganda form, which appears to be a new disease, and was first recognized in 1901. It is violently epidemic, and is estimated to have caused 200,000 deaths between 1898 and 1906. On the other hand, there is the sleeping-sickness of Nyasaland and Rhodesia. This has been recognized as a distinct form of the disease only since 1908. It is almost certainly not epidemic. The total number of cases which a vigorous search has been able to discover is 153 in Nyasaland and 107 in Rhodesia from 1908 to 1914. It is said that the natives recognize this as an old disease. Though much less widespread than the Uganda disease, the sleeping-sickness of Nyasaland and Rhodesia is far more deadly. Death usually results in from three to six months after the appearance of the symptoms. Hitherto no treatment has been successful, and the disease may be regarded as almost invariably fatal. The Uganda form, on the other hand, is much more prolonged. Even untreated cases usually last from eighteen months to two years. If the patient is treated at an early stage life is often prolonged for years, and there are many cases of apparent recovery. The tsetse-fly has in each case proved to be the carrier of the disease; but it has also been proved that Uganda sleeping-sickness is caused by a different species of the tsetse-fly from that which carries the Rhodesian or Nyasaland form. The *Glossina palpalis,* which carries the Uganda disease, never goes far from water, and is altogether unknown in those parts of Nyasaland and Rhodesia where the other form of the disease occurs. It is now proved almost beyond doubt that the carrier in this case is *Glossina morsitans.* Its distribution is capricious and it seems to be independent of water. Its migrations are not understood, and its length of flight in search of food is unknown. As to the part played by wild animals in the distribution of sleeping-sickness, there appears to be little doubt that in the case of the Uganda form it is of minor importance as compared with that played by man himself as a reservoir from which the fly derives the infection. In the case of the Rhodesian or Nyasaland form there is much disagreement between the authorities, and the committee comes to the conclusion that the evidence is conflicting as to whether the wild animals which are a reservoir of the disease affecting domestic stock are a danger to man.

Tuberculosis in London

The London County Council has for some time been preparing a scheme for dealing with tuberculosis in the metropolis. This has now been completed and adopted. There will be a complete network of tuberculosis dispensaries at which treatment will be provided by the local sanitary authorities. For their upkeep the council will contribute so far as uninsured persons are concerned grants not exceeding 50 per cent. (provision for insured tuberculous persons has been made under the national insurance act, as reported in previous letters to The Journal). The dispensaries will be linked up with the hospitals. Arrangements will be made for residential treatment both in hospitals and sanatoriums. An advisory board representing hospitals, dispensaries and sanatoriums will assist in insuring some uniformity of standard in the selection of patients. Recommendations for residential treatment will be received from local medical officers of health. If, however, there appears to be any doubt as to the suitability of the case, it will be submitted to a rota of physicians to be selected by the advisory board. When a patient leaves the residential institution to which he has been sent by the council, arrangements will be made for the local dispensary or other suitable agency to continue his treatment. As a condition of receiving residential treatment, the patient undertakes to remain under medical supervision on his discharge. The committee is of opinion that by the end of the current financial year 160 beds will be required in hospitals and 240 beds in sanatoriums for adults, and 150 beds in residential institutions for children. The London Insurance Committee has obtained the accommodation which it requires at a price not exceeding $7.50 a week for each bed, and it will be possible for the council to obtain beds at ten hospitals and four sanatoriums on these conditions. Many more beds, however, will be necessary and the Asylums Board is to be asked to provide 150 beds. In the case of children the weekly charge for each bed should not exceed $5. The cost of the scheme for the present financial year is put at $144,605, toward which the government would contribute $61,250, and at $200,000 for 1915-1916, to which the government would contribute $100,000.

PARIS LETTER

Paris, May 22, 1914.

Personal

The Académie de médecine, at its session May 19, elected Charles Eduard Hédon, professor of physiology at the Faculté de médecine of Montpellier, and Charles Nicolle, director of the Pasteur Institute of Tunis, as national correspondents. Dr. Hédon is known especially for his experimental research work in pancreatic diabetes and has published a "Précis de physiologie." Dr. Charles Nicolle last year, in collaboration with Dr. Blaizot, introduced an atoxic antigonococcic vaccine (The Journal, Nov. 15, 1913, p. 1825).

Dr. Bosc, professor of pathologic anatomy at the Faculté de médecine de Montpellier, has just been appointed professor of pathology and general therapeutics at that school.

Dr. Etienne, professor of general and internal pathology at the Faculté de médecine de Nancy, has just been appointed professor of medical clinics at that school.

Physicians Elected Deputies

Fifty-five physicians have just been elected deputies, the same number as in 1910. Of these, thirty-seven were re-elected. It is an interesting fact that the three deputies from the department of Tarn-et-Garonne are all physicians.

The Plague at Senegal

The governor general of French West Africa has notified the Minister of the Colonies that seven cases of plague were reported, May 13, in a native village at some distance from Dakar. No new case has since developed.

General Anaphylaxis

Anaphylaxis has been conceded, hitherto, to be specific, in the sense that the substance used to produce anaphylactic shock must be identical with the sensitizing substance. Such a narrow specificity has been observed in certain cases that an animal which had been sensitized with goat's milk did not react to cow's milk, and that a guinea-pig which had been inoculated with rabbit-serum did not react to horse-serum, and vice versa. It appears from a series of experiments which Prof. Charles Richet has just reported to the Académie des Sciences that anaphylaxis need not be specific; animals which had been given non-fatal and (in appearance, at least) innocuous doses of phosphorus showed themselves susceptible to chloroform, just as animals did which had been chloroformed a month before. Richet concludes that, besides the specific anaphylaxis, a general anaphylaxis exists which is derived from indirect anaphylaxis (The Journal, Feb. 28, 1914, p. 711). The organism may, therefore, through one poison, be sensitized to quite different poisons.

Surgery for Diabetics

At the session of the Académie de médecine, May 19, Dr. Marcel Labbé, *agrégé* professor at the Faculté de médecine de Paris showed that the danger in operations on diabetics could be traced to two principal causes: hyperglycemia and acidosis, without considering vascular lesions which do not properly belong to diabetes. Hyperglycemia favors suppuration, but is far from being fatal in aseptic operations. It is well to combat hyperglycemia by a diet before operation.

Labbé deduces the following practical rules: Only imperative operations should be performed on diabetics; by preliminary treatment, glycemia, and acidosis should be reduced; a mixed diet of carbohydrates may be employed in the case of non-emaciated diabetics; a diet of dried vegetables, oats, or milk, with an alkaline treatment, may be given diabetics with acidosis. Before the operation 40 gm. of sodium bicarbonate should be administered. For the anesthetic the preference should be given to local or general anesthesia by ethyl chlorid. After the operation large doses of sodium bicarbonate should be administered orally or subcutaneously; then, when able to take food, the patient should be given vegetables, and oat or milk broths.

Refrigeration in the Hospitals of Paris

Dr. Lortat-Jacob has just reported the results of his inquiry into the use of refrigeration in the hospitals of Paris. With the exception of the Cochin hospital, the Hôpital de la Pitié and the military hospital at Val-de-Grâce, all the hospitals of Paris lack refrigeration facilities for the preservation of provisions and bodies. During the summer, more than 1,000 quarts of milk are lost each day in certain hospitals of Paris for lack of a suitable refrigerating plant.

BUDAPEST LETTER

Budapest, May 11, 1914.

Increase of Length of Life of Hungarian Women

The detailed statistical results of the last census, published at the end of last month, have been discussed by various medical men from different points of view. A noted gynecologist has examined the data available for comparing the duration of life between men and women, and concludes that women live longer than men. The average lifetime of the Hungarian women, according to the census taken in 1880, was 42.5 years, but according to the last census it is now 51 years. In some parts of Hungary the improvement is still greater. For instance, in the Székely district in Transsylvania the average is 59.2 years. According to this gynecologist the longevity of women is due to the fact that women work less than men. The data of the present census show that there are fewer hysteric and nervous women than in former years. Insanity has also decreased slightly. These favorable results are for the most part due to the general prosperity of the country. Wages in Hungary have been almost doubled during the last ten or twenty years by the increase in agriculture, trade and manufacturing.

Near-Sightedness in Schoolchildren

Dr. Bogdan, in his account of the examination of two hundred text-books from a sanitary point of view, draws particular attention to the fact, already established by many prominent investigators, that near-sightedness in children either originates or develops in connection with the schoolroom. The chief cause is the too prolonged reading, writing and drawing in which visual accommodation, as well as convergence, is greatly fatigued. Undue strain of the muscles of accommodation causes an active hyperemia; the venous circulation is hindered, there is an increase in the intra-ocular pressure and the sclerotic is gradually stretched. Too strong convergence works even greater harm. It is, of course, understood that in some children near-sightedness is hereditary, and as a result, they become affected more quickly than their healthier comrades. In addition, near-sightedness may be the result of insufficient light and improper equipment in desks and other school furniture.

Dr. Bogdan insists that the paper used in the text-books should not have a glossy surface. Under artificial light a glossy surface causes improper focusing of the eye and necessitates frequent changes in the position of the book as well as of the head. The paper should be thick enough to prevent the printing on one page from penetrating to another. A few authorities have recommended yellow paper, but the majority favor white paper, which gives a better contrast between the printed matter and the background.

Effects of Tobacco-Smoking

In a recent meeting of the Medical Society, Dr. Pekanovits read a paper on this subject. He stated that tobacco-smoke contained nicotanin, collidin and other pyridin derivatives, such as acids, resins, carbon dioxid, hydrocyanic acid and ammoniacal salts, as well as the nicotin. Two drops of nicotin placed on a dog's tongue produced great weakness, convulsions and death in less than a minute; eight drops were sufficient to kill a horse. Tobacco contained from 2 to 8 per cent. nicotin, and M. le Bon, a French investigator, had determined that although this was changed in smoking, still it was converted into other pyridin products, which were just as poisonous. Dr. Pekanovits found that the bodies did not condense to any appreciable extent in the mouth, and were for the most part exhaled, so that the physiologic effect of ordinary smoking was nil. Susceptible persons, however, might be affected by breathing the air in which there was much tobacco-smoke.

The action of nicotin has been shown by the investigations of Petit to be intermediate between that of bromids and that of digitalis. It soothes the nervous system, but causes a powerful and rapid contraction of the vessels and a rise in blood-pressure. One of its best-known dangers is angina pectoris, caused, perhaps, by the severe contractions of the coronary arteries. Prolonged use induces the development of arteriosclerosis. Tobacco is a "habit-drug" like opium, cocain and alcohol; its devotee, although he is aware of its harm, loses the force of will necessary to break the habit. Tobacco-smoke has apparently no bactericidal action on any micro-organisms present in the lungs. One of the first effects of an overdose is nausea. Prolonged smoking is a distinct factor in the production of digestive troubles.

Marriages

Frank J. Erdlitz, M.D., Johannesburg, Mich., to Miss Matilda La Rivere of Manistee, Mich., at Grayling, Mich., May 20.

Louis Raymond Burnett, M.D., Cambridge, Mass., to Miss Isabel Knowlton Thomas, Milton, Mass., recently.

Gaylord Eugene Pitts, M.D., Mount Horeb, Wis., to Miss Agnes Helene Dahle of Minneapolis, May 28.

William A. Gardner, M.D., Cincinnati, to Miss Bertha Kleinknecht, at Middletown, Ohio, April 14.

William L. Munroe, M.D., Pittsburgh, Pa., to Miss Frances Rudd Eno of Pine Plains, N. Y., June 1.

Ralph Frank Luse, M.D., Comanche, Iowa, to Miss Pearl Minear of Council Bluffs, Iowa, May 26.

Charles Henry Schmidt, M.D., Chicago, to Miss Effie Olson of Melrose Park, Ill., May 28.

Herman Renner, M.D., Chattanooga, Tenn., to Miss Marie Kinny of New York City, recently.

Worth Clark, M.D., to Miss Florence Cunningham, at Charleston, W. Va., May 14.

Arter W. Deal, M.D., to Miss Gladys Smith, both of Lewistown, Mont., May 25.

Deaths

Emil Gruening, M.D. College of Physicians and Surgeons in the City of New York, 1867; a veteran of the Civil War; and a pioneer ophthalmologist and otologist of New York City; died at his home, May 30, from cerebral endarteritis, aged 71. Dr. Gruening was appointed assistant surgeon to the New York Ophthalmic and Oral Institute in 1871; ophthalmic surgeon to Mt. Sinai Hospital in 1879, and to the German Hospital in 1880. At the time of his death he was consulting ophthalmic and oral surgeon to Mt. Sinai Hospital; consulting ophthalmic surgeon to the German Hospital and New York Eye and Ear Infirmary; and consulting surgeon to the New York Infirmary for Women and Children. He had served as president of the American Ophthalmologic Society, American Otological Society and Society for Relief of Widows and Orphans of Medical Men; he was also a member of the American Laryngological, Rhinological and Otological Society, and many other scientific bodies. Among his most notable achievements were the development of the mastoid operation, and his warning regarding the danger of blindness from the use of wood alcohol. He was a voluminous contributor to the literature of his specialty; and was the author of the chapter on "Diseases of the Eye" in Norris and Oliver's encyclopedic work.

Samuel Caldwell Benedict, M.D. Miami Medical College, Cincinnati, 1880; of Athens, Ga.; a member of the Medical Association of Georgia, and its president in 1900; acting assistant surgeon, U. S. Army, in 1880 and 1881; professor of medical jurisprudence in the law school of the University of Georgia, Augusta, since 1883, and professor of materia medica in the school of Pharmacy; local surgeon of the Seaboard Air Line, Central Railroad of Georgia, Gainesville Midland Railroad and Georgia Railroad; president of the Association of Surgeons of the Central Railroad of Georgia in 1903; and of the Association of Seaboard Air Line Surgeons in 1911; a member of the State Board of Health of Georgia, and its president in 1911; died in a sanatorium in Macon, Ga., June 1, aged 58.

Charles Hicklen Preston, M.D. University of Iowa, Iowa City, 1873; a Fellow of the American Medical Association, and one of the oldest practitioners of Davenport, Iowa.; for many years secretary and once president of the Scott County Medical Society; trustee and president of the Davenport Academy of Sciences, and for nine years a member of the board of education; died at his home in Davenport, May 21, from cerebral hemorrhage, aged 69.

Arthur Wharton Swann, M.D. College of Physicians and Surgeons in the City of New York, 1907; an instructor in his Alma Mater; assistant attending physician to the Presbyterian Hospital, and chief of the medical clinic of the Presbyterian Dispensary; died in the Manhattan Eye, Ear and Throat Hospital, New York City, May 28, from septicemia, following an operation on the throat a week before, aged 33.

Joseph Franklin Hobson, M.D. Western Reserve University, Cleveland, Ohio, 1886; a Fellow of the American Medical Association; professor of anatomy in his Alma Mater from 1887 to 1892; and professor of clinical surgery in the Cleveland College of Physicians and Surgeons from 1892 to 1906; one of the founders, chief of staff and visiting surgeon to Cleveland General Hospital, and visiting surgeon to St. John's and the City Hospital; local surgeon of the Pennsylvania and Lake Shore and Michigan Southern railroads; and consulting surgeon to the Brotherhood of Railroad Trainmen; died at his home in Cleveland, May 24, aged 52.

George Washington Hosmer, M.D. College of Physicians and Surgeons in the City of New York, 1864; a member of the Medical Society of the State of New York and New York Academy of Medicine; a veteran of the Civil War; and for many years confidential secretary to the late Joseph Pulitzer, editor of the New York *World;* author of numerous articles and books on political economy; died at his home in Summit, N. J., June 3, from senile debility, aged 83.

Henry St. George Lyons Hopkins, M.D. University of Pennsylvania, Philadelphia, 1855; for several years after his graduation a surgeon on transatlantic steamships; surgeon in the confederate service throughout the Civil War, and lieutenant-colonel of the staff of General Pendleton at its close; a resident of Fresno, Cal., for thirty-three years; at one time health officer of Fresno County; died at his home in that city, May 25, aged 78.

Bret Nottingham, M.D. New York Homeopathic College and Hospital, New York City, 1901; a Fellow of the American Medical Association, and a member of the Michigan State Board of Registration and Medicine; city physician and health officer of Lansing, Mich., and local surgeon for the Lake Shore and Michigan Southern System; died in the Harper Hospital, Detroit, May 26, from malignant disease, aged 37.

Daniel C. Gentsch, M.D. Georgetown University, Washington, D. C., 1889; for several years deputy judge and clerk of the probate court of Tuscarawas County, Ohio, and principal examiner of the United States Pension Bureau; died at his home in New Philadelphia, Ohio, May 30, from cerebral hemorrhage, aged 69.

Edwin Y. Chilton, M.D. Miami Medical College, Cincinnati, 1874; a Fellow of the American Medical Association; formerly state senator and president of the Board of Medical Examiners of Minnesota; one of the most prominent practitioners of that state; died at his home in Howard Lake, Minn., May 25, aged 64.

Abijah Johnson, M.D. Denver, Colo., College of Medicine, 1882; a practitioner since 1863; for five years mayor of Earlham, Iowa; for twenty years president of the school board of Montrose, Colo., and once president of the Montrose County Medical Society; died at his home in Glendale, Cal., May 24, aged 76.

Ellis Sanders Potter, M.D. Long Island College Hospital, Brooklyn, N. Y., 1878; one of the oldest colored practitioners of Louisville, and once professor of theory and practice of medicine and pediatrics in Louisville National Medical College; died at his home in Louisville, May 28, from typhoid fever, aged 64.

Mary L. Widdop, M.D. Medical College of Indiana, Indianapolis, 1901; a member of the Indiana State Medical Association; a member of the medical staff of the Northern Hospital for the Insane of the State of Indiana, Longcliff, Logansport; died in that institution May 26, from nephritis, aged 45.

Joseph O. Walkup, M.D. Chicago College of Medicine and Surgery, 1908; Captain, M. C., U. S. Army; once instructor in physiology and assistant in clinical neurology in his Alma Mater; was struck by lightning and instantly killed, June 1, at Fort Bayard, N. Mex.; aged 29.

Christian Charles Hadley Carlson, M.D. Cooper Medical College, San Francisco, 1894; who founded the Mount Shasta Hospital, Yreka, Cal.; died in San Francisco, May 16, from septicemia following an operation for appendicitis, aged 47.

John Nelson Rankin, M D. Vanderbilt University, Nashville, Tenn., 1888; a member of the Indiana State Medical Association; formerly of Winchester, Ky.; died at his home in Cartersburg, Ind., May 18, from heart disease.

William J. Worsham, M.D. Washington University School of Medicine, 1868; a confederate veteran; and the oldest pharmacist of Knoxville, Tenn.; died at his home in that city, May 21, aged 74.

Jacob Carpenter Shimer, M.D. University of Pennsylvania, Philadelphia, 1861; surgeon in the federal service during the Civil War; for thirty-five years a practitioner of Baltimore; died at the Home for Widows and Orphans of Physicians, in that city, May 21, aged 75.

Daniel W. Braden, M.D. Medical College of the State of South Carolina, Charleston, 1852; aged 88; a trustee and treasurer of Washington, Pa., College, for several years; died at his home in Lebanon, Tenn., May 19, from the effects of a carbuncle on the neck.

Glenmore Combs, M. D. Louisville, Ky., Medical College, 1875; a member of the Kentucky State Medical Association; of Winchester; for nearly forty years a practitioner of Clark County, Ky.; died in a church in Winchester, May 17, from heart disease, aged 64.

Daniel Webster Border, M.D. Bellevue Hospital Medical College, 1876; formerly a practitioner of Kearneyville, W. Va.; and at one time a member of the State Board of Agriculture; died at his home in Charlestown, W. Va., May 17, aged 60.

Zachariah B. J. Griffing, M.D. Jefferson Medical College, 1844; a practitioner until the age of 75, and then placed in charge of the poorhouse of Warren, Miss.; died at his home in McGehee, Ark., March 21, from cerebral hemorrhage, aged 92.

Bertram U. Doolittle, M.D. Fort Wayne, Ind., College of Medicine, 1905; of Whiting, Ind.; a Fellow of the American Medical Association, and a specialist on diseases of children; died at his home in Whiting, Ind., about May 16, aged 33.

Emma Mary Eastman Sanborn, M.D. Boston University School of Medicine, 1876; for many years a practitioner of Andover, Mass.; a specialist in the care of imbecile children; died at the Barr Sanitarium, Andover, recently, aged 73.

James Savage Woodward, M.D. George Washington University, Washington, D. C., 1880; a member of the Medical and Chirurgical Faculty of Maryland; formerly a surgeon died at his home in Roland Park, Md., May 28, aged 59.

James Henry M. Karsner, M.D. Jefferson Medical College, 1868; a veteran of the Civil War; and a member of the Medical Society of the State of California; died at his home in Oroville, Cal., May 15, from heart disease, aged 69.

John W. Pipkin, M.D. University of Arkansas, Little Rock, 1890; of Tillar, Ark.; aged 44; a Fellow of the American Medical Association; was shot and killed by his father-in-law, Dr. J. T. Cheairs, at Tillar, Ark., May 30.

Bela W. Coggeshall, M.D. Jefferson Medical College, 1866; a member of the Michigan State Medical Society; of Flint, Mich.; aged 72; was struck by a street-car in Detroit, and died as a result of his injuries, about May 23.

Robert Jones Dysart, M.D. College of Physicians and Surgeons, Chicago, 1900; assistant physician at the State Hospital for the Insane, Winnebago, Wis.; died in that institution, May 25, from heart disease, aged 41.

William B. Swisher, M.D. Rush Medical College, 1854; formerly of Lincoln, Neb.; surgeon of Kentucky Volunteers during the Civil War; died at his home in Los Angeles, May 29, from senile debility aged 88.

Michael P. Stoltz, M.D. Louisville, Ky., Medical College, 1896; a member of the Kentucky State Medical Association; of Louisville; died at the home of his sister in that city, May 18, from heart disease, aged 58.

Thomas Edward McDonald, M.D. Detroit College of Medicine, 1894; a Fellow of the American Medical Association; local surgeon at Holly, Mich., for the Grand Trunk System; died at his home, May 22, aged 46.

Hettie M. Stewart McFall, M.D. Southwestern Homeopathic Medical College, Louisville, 1905; of Fort Wayne, Ind.; died at the home of her daughter in New Albany, Ind., May 21, from nephritis, aged 54.

Donald Duncan McDonald, M.D. McGill University, Montreal, 1887; for many years a practitioner of Petitcodiac, Ont.; physician to the Maritime Penitentiary, Dorchester, Ont.; died January 23, aged 55.

William T. Whitaker, M.D. Fort Worth, Texas, University, 1910; formerly of Fort Worth, Texas; died in his room in McKinney, Texas, May 27, from the effects of an accidental overdose of morphin, aged 32.

William Bayard Carroll, M.D. University of Michigan, Ann Arbor, 1880; died at his home in Chicago, May 30, aged 56.

John Underwood Raymond, M.D. University of Michigan, Ann Arbor, 1875; of Washington, D. C.; medical examiner for the United States Pension Bureau; died at his home in Washington, May 15, aged 63.

George Dresser, M.D. Harvard Medical School, 1862; a member of the Massachusetts Medical Society, and a practitioner of Chicopee, Mass., for more than forty years; died at his home, May 16, aged 76.

John Frank Alcorn, M.D. Western Pennsylvania Medical College, Pittsburgh, 1900; a member of the Medical Society of the State of Pennsylvania; died at his home in Wilkinsburg, Pa., May 25, aged 43.

John Laurence Gartland, M.D. New York University, New York City, 1891; a member of the Ohio State Medical Association; and a resident of Cleveland; died in Lakeside Hospital, May 14, aged 47.

Adolph G. Gehr, M.D. Chicago College of Medicine and Surgery, 1908; formerly an intern in Cook County Hospital, Chicago; died in Los Angeles, Cal., May 26, from valvular heart disease, aged 32.

James M. Cooper, M.D. Jefferson Medical College, 1874; of Reinhold's Station, Pa.; for several years physician of Schuylkill County; died at the home of his son in Shillington, Pa., May 27, aged 64.

Thomas F. Holaday, M.D. Cincinnati College of Medicine and Surgery, 1864; for fifty years a practitioner of Monrovia and Mooresville, Ind.; died at his home in Monrovia about May 19, aged 79.

Alexander B. Ferrell, M.D. Tulane University, New Orleans, 1873; of Wideners, Ark.; a member of the Board of Health of St. Francis County, Ark.; died at Carlisle, Ark., May 19, aged 64.

Leander Anie Steele (license, six years of practice, Michigan, 1900). Formerly a member of the state tax commission; died at his home in Lansing, Mich., March 11, from pneumonia, aged 64.

John Byron Thomas, M.D. Indiana University School of Medicine, Indianapolis, 1909; house physician at Bethel Hospital, Colorado Springs, Colo; died at Wabash, Ind., May 20, aged 26.

Daniel B. Stewart (license, years' of practice, Ohio, 1896). For sixty-three years a practitioner of Williams County, Ohio; died at his home in Jefferson Township, May 25, aged 92.

Lewis Eugene Stanton, M.D. King Eclectic Medical College, Des Moines, Iowa, 1886; a pioneer resident of the Platte Valley; died at his home in Sterling, Colo., May 8, aged 54.

Lewis Hodges Clapp, M.D. New York Homeopathic Medical College, New York City, 1904; of Brooklyn; died at Lakewood, N. J., May 17, after an operation for appendicitis, aged 33.

Marietta E. Livingston Hughes, M.D. Hahnemann Medical College, Chicago, 1876; of Spokane, Wash.; died in Sacred Heart Hospital, Spokane, May 17, from lobar pneumonia, aged 71.

John M. Dunn, M.D. Missouri Medical College, St. Louis, 1861; surgeon in the confederate service throughout the Civil War; died at his home in Richmond, Ark., May 19, aged 80.

Gibson Francis Brock, M.D. Tulane University, New Orleans, 1909; a member of the State Medical Association of Texas; died at his home in Corrigan, Texas, May 26, aged 30.

Henry Cleves Symmes, M.D. University of Pennsylvania, Philadelphia, 1880; a member of the Medical Society of New Jersey; died at his home in Cranbury, N. J., May 8, aged 58.

Amos W. Bickford, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1865; a pioneer practitioner of Pasadena, Cal., died at his home in that city, May 21, aged 76.

Thomas Egbert Enloe, M.D. University of Nashville, Tenn., 1874; of Nashville; died at the home of his daughter in that city, from cerebral hemorrhage, May 26, aged 69.

John J. Bradley, M.D. Minnesota Hospital Medical College, Minneapolis, 1885; died at his home in Milwaukee, May 12, aged 82.

Littleton B. Richards, M.D. Memphis Hospital Medical College, 1898; died at his home in Avery, Ark., May 14, aged 42.

John H. Page, M.D. University of Louisville, Ky., 1875; died at his home in Madill, Okla., May 16, aged 62.

The Propaganda for Reform

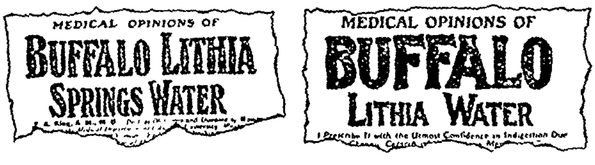
In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

BUFFALO LITHIA WATER

Contains One-Fifth as Much Lithium as Potomac River Water

Some years ago, Alexander Haig evolved the theory that most diseases are due to uric acid. The data on which he founded his theory were not corroborated by scientific men, and investigation showed that his methods were unreliable. In spite of the fact that Haig's theories are utterly discredited, and have been for years, the uric acid fallacy still persists, although it is now largely confined to the public. Shrewd business men, especially those who are more intent on making money than they are concerned with the manner in which that money is made, owe much to Haig's theory. As a business proposition, uric acid has been one of the best-paying fallacies on the market—and possibly still is. It is only necessary to refer to The Journal's recent article[1] on the Turnock mail-order medical fraud to emphasize this fact.

Contemporary with, and to a certain extent a corollary of, the uric acid fallacy was another, *viz.*, that lithium would eliminate uric acid. This at once gave a good working principle for the proprietary men. Uric acid, we were told, causes disease; lithium, we were also told, would eliminate uric acid; therefore, lithium is the new elixir of life! Could anything be simpler?



MEDICAL OPINIONS OF
BUFFALO LITHIA
SPRINGS WATER

MEDICAL OPINIONS OF
BUFFALO
LITHIA WATER

NOW AND THEN

Showing how "Buffalo Lithia Water" in the course of time became "Buffalo Lithia *Springs* Water." The government has shown that, to obtain a therapeutic dose of lithium from Buffalo Lithia Springs Water, *it would be necessary to drink 200,000 gallons of the water.* The government also declared that Potomac River water contained five times as much lithium as does Buffalo Lithia Springs Water.

Accepting this theory, it was inevitable that mineral waters containing lithium salts should become highly popular. Many exploiters of mineral waters began to place most emphasis on the lithium salts in their waters even in those cases in which lithium was present in such infinitesimal amounts as to render its detection impossible by any but spectroscopic methods.

One of the best known, because most widely advertised, of the so-called lithia waters is Buffalo Lithia Water—or what used to be called Buffalo Lithia Water. After the Federal Food and Drugs Act came into effect, by which falsification on the label was penalized, the name of Buffalo Lithia Water was changed to Buffalo Lithia Springs Water. The reason for this change was that when Buffalo Lithia Water was subjected to examination by the government chemists it was found to contain so little lithium that the amount present was unweighable—it could be demonstrated only by the spectroscope. It was evidently, therefore, not a lithia water *in that it did not contain—at least in quantities* that could be consumed—an amount of lithium that would give the therapeutic effects of lithium: Possibly the company imagined that by changing the name from "Buffalo Lithia Water" to "Buffalo Lithia Springs Water" it had cleverly evaded the federal law. *Their argument was to this effect:*

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1. The Journal A. M. A., May 23, 1914, p. 1675.

The springs from which this water is taken are known as Buffalo Lithia Springs; therefore, it is not a misstatement of facts to call this Buffalo Lithia Springs Water.

WHAT IS A LITHIA WATER?

The Supreme Court of the District of Columbia, holding a district court, has recently given an opinion on the Buffalo Lithia Springs Water case. The findings of the court are refreshingly simple, and characterized by that broad commonsense view that is becoming increasingly more common among modern jurists. Read Judge Gould's opinion as to what constitutes a lithia water:

> "Speaking generally, and as an individual of average intelligence and information, it would seem that if one were offered a water which the vendor told him was a 'lithia' water, one would have the right to expect enough lithium in the water to justify its characterization as such, thus differentiating it from ordinary potable water; and this amount would reasonably be expected to have some effect on the consumer of the water by reason of the presence of the lithium."

Certainly a reasonable attitude, and one which the man in the street not only can understand but will agree with. Then came the question as to the actual lithium content of Buffalo Lithia Springs Water, and the court said:

> "For a person to obtain a therapeutic dose of lithium by drinking Buffalo Lithia Water he would have to drink from one hundred and fifty thousand to two hundred and twenty-five thousand gallons of water per day. It was further testified, without contradiction, that Potomac River water contains five times as much lithium per gallon as the water in controversy."

SOME TESTIMONIALS

Here, then, is a water that has for years been advertised first, in medical journals, and later, in lay publications, as a "lithia water" yet, actually, it contains less lithium, five to one, than is to be found in ordinary river water. This is a point for physicians to ponder well over. Turn to the back volumes of medical journals and read, both in the advertising and reading pages, the elaborate testimonials, given by men high in the medical profession, on the marvelous effects obtained by the use of Buffalo Lithia Water. Read the following in light of the fact that the water from the Potomac River contains five times as much lithium as Buffalo Lithia Water:

> "In the class of cases in which lithia, soda and potash are regarded as most specially indicated, I have obtained far better results from the Buffalo Lithia Waters than from any of the preparations of the lithium salts of the Pharmacopeia." *(Statement by a member of the Faculty of Medicine of Paris, France,* etc.)

> "Its [Buffalo Lithia Water] therapeutic effects, in my practice, have been vastly superior to those obtained from Lithia Tablets or other Lithia preparations." *(Statement by an ex-president of the University College of Medicine, Richmond, Va., etc.)*

> "It [Buffalo Lithia Water] is strikingly superior to emergency solutions of lithia tablets and pure water, even where the said solution is an exceedingly strong one." *(Statement by a former Professor of Clinical Medicine of the College of Physicians and Surgeons, New York, and vice-president of the American Medical Association, etc.)*

> "When Lithia is indicated, I prescribe Buffalo Lithia Water in preference to the Salts of Lithia, because it is therapeutically superior to laboratory preparations of Lithia." *(Statement by a former professor in the Medical College of Virginia and ex-president of the Medical Society of Virginia, etc.)*

> "Buffalo Lithia Water . . . by its richness of composition of Lithia, is of marvelous efficacy, in cases of gout, of chronic, articular, and muscular rheumatism . . ." etc. *(Statement by former Physician in Ordinary to the Pope; Member of Academy of Rome, etc.)*

> "I have tried carbonate of lithia dissolved in water in various proportions; but it certainly does not have the same effect as Buffalo Lithia Water." *(Statement by a former Surgeon-General of the U. S. Army, etc.)*

These are but a few of many testimonials from physicians that might be quoted. They are interesting from many points of view. They show the worthlessness of testimony of this sort—no matter from what source—and the fallacy of that based on so-called clinical evidence.

To go back to the court's findings: In the case of the government against Buffalo Lithia Springs Water, one other judicial opinion is worthy of attention, that referring to the attempt on the part of the exploiters of the water to circumvent, on a technicality, the evident intent of the Food and Drugs Act. Said Judge Gould:

> "The argument seems to be that if Buffalo Lithia Springs are falsely named, being called 'Lithia' Springs, when they do not flow water containing lithium, therefore the proprietors have the right to sell the product as being Buffalo Lithia Springs Water, thus perpetuating on the public the misnomer connected with the origin of the water. It is not apparent how the deceit practiced on the public by the label is mitigated by carrying it back to the designation of the spring from which the water comes."

For years no one, apparently, ever criticised the claims made for this product. Finally, we got the Food and Drugs Act and the federal officials, acting under the authority vested in them by that law, in December, 1910, declared Buffalo Lithia Water misbranded. Thus this old established vested interest was attacked. The company, of course, fought. It first demurred to the charge brought, and in April, 1912, the demurrer was sustained. At the same time an amended libel was filed by the government, which the company again demurred to. This demurrer was overruled in June, 1912, whereon the company in December, 1912, filed an answer denying that the water was misbranded. The question has now (1914) been finally decided by the court sitting as a jury, the matter having been submitted by agreement to the court.

Buffalo Lithia Water has been sold since 1878. During this period undoubtedly many physicians have prescribed enormous quantities of this water, and many more laymen have taken the water on their own initiative, based on the advertised claims made for it. Practically all who purchased the water, whether directly or on the advice of physicians, did so in the belief that they were getting lithium. Had they known that, to get a therapeutic dose of lithium they would have had to drink 200,000 gallons of Buffalo Lithia Water, they would have felt, and rightly so, that they were the victims of an expensive hoax.

THE GERMAN PROPAGANDA FOR REFORM

Appreciation by a German Lay Publication

Of all those interested in the reform of the proprietary drug business, the patient has the most at stake—and the public is beginning to understand this fact. If physicians are slow in recognizing the necessity for improvement, laymen will eventually demand reform in their own interests. The movement, therefore, will not be halted by the indifference of the unprogressive element of the medical profession. New evidence of this fact is furnished by a recent editorial comment by the German lay periodical, *Wohlfahrt und Wirtschaft* (Public Welfare and Economics), on the Arzneimittel-Kommission, a German organization resembling in purpose if not in scope the Council on Pharmacy and Chemistry of the American Medical Association.

"One would suppose," says this lay journal, "that medicinal preparations which did not win the approval of scientific medicine would not be used by any physician, but the contrary is the case. In fact, those new medicinal preparations or old ones with new names that flood the market far surpass the actual demand according to the judgment of all authorities. The impartial advisers in this field, practitioners and members of medical faculties, demand, as a matter of public welfare that this overproduction should be regulated in the interests of the sick, the consumers; but, unfortunately, a medical man, like any one else, is impressed by the suggestion from advertising done on a large scale."

The movement for reform, *Wohlfahrt und Wirtschaft* goes on to explain, is not exclusively a medical one. It is a part of the reaction of "economic common sense" against a too individualistic commercial system which leads to overproduction. In other words, it is a reaction against the system of making things because they can be sold rather than because they are needed. The interests of producers need to be harmonized with those of consumers, not merely in the drug trade alone, but throughout the commercial world. *Wohlfahrt und Wirtschaft* quotes with unqualified approval the Arzneimittel-Kommission's statement of its position: An industry which serves the science of healing must be guided by that science. (*Eine Industrie die der Heilweissenschaft dient, hat sich nach der Heilweissenschaft zu richten.*)

The movement for reform in Germany has apparently gathered sufficient impetus among the laity to go on of its own momentum, even though, with one exception, German medical journals, reluctant to lose the advertising of drug houses by publishing criticisms of their wares, have become lukewarm, if not antagonistic, to the efforts of the Arzneimittel-Kommission. The one exception is the *Therapeutische Monatshefte*, which, in its May issue, quotes in full the editorial just referred to and makes the following comment: "These lines reveal such intimate knowledge and correct judgment of existing conditions that the suggestions advanced in regard to possible reforms deserve serious consideration. For us physicians the editorial is important in that it recognizes that the efforts of the profession to accomplish the reforms aimed at are rational and beneficial from the standpoint of general economics and the public welfare."

Association News

PUBLIC HEALTH SUNDAY IN PHILADELPHIA

Following the custom observed for several years past, the Council on Health and Public Instruction of the American Medical Association has offered this year to furnish speakers for all Philadelphia churches desiring an address on public health on Sunday, June 21, the Sunday preceding the Atlantic City *session. A list of the churches, speakers and subjects* follows:

Belmont Avenue Baptist, Corner of Belmont and Westminster, Rev. W. A. Spinney, Pastor.
Morning, 10:30: Dr. J. W. Kerr, Assistant Surgeon-General, U. S. P. H. S., Washington, D. C., "Opportunities of the Church in Public Health Endeavor."

Chelten Avenue Baptist, Chelten Avenue above Boyer Street, Rev. P. R. Hayward, Pastor.
Evening, 7:45: Dr. Calvin S. White, Portland, Ore., "Socialization of Medicine."

Chestnut Street Baptist, Fortieth and Chestnut streets, Rev. George D. Adams, Pastor.
Evening, 8: Dr. Thomas D. Coleman, Augusta, Ga., "Public Health."

Dotterel Memorial Baptist, Twenty-Fourth and Dickinson streets, Rev. E. D. Shull, Pastor.
Evening, 8: Dr. Claude A. Smith, Atlanta, Ga., "Public Health."

Fifth Baptist, Eighteenth and Spring streets, Rev. W. Q. Rosselle, Pastor.
Morning, 10:30: Dr. W. W. Grant, Denver, "Public Health."

First Baptist Germantown, Price Street near Germantown Avenue, Rev. Thomas S. Samson, Pastor.
Morning, 10:30: Dr. Oscar Dowling, New Orleans, "Public Health."

Fiftieth Baptist, North Seventh Street and Susquehanna Avenue, Rev. J. Francis Behrens, Pastor.
Morning, 10:30: Dr. Frank B. Wynn, Indianapolis, "Mental Hygiene in Relation to Disease."

The Baptist Temple, Broad and Berks street, Rev. Russell H. Conwell, Pastor.
Morning, 10:30: Dr. Guilford H. Sumner, Des Moines, Iowa, "Disease and Its Prevention."

Immanuel Baptist, Twenty-Third and Summer streets, Rev. William Oswald, Pastor.
Morning, 10:30: Dr. Charles S. Williamson, Chicago, "The Relationship of Mortality and Public Health."

Northwest Baptist, Lehigh Avenue and Twenty-Eighth Street, Rev. W. Dallas Cope, Pastor.
Evening, 7:45: Dr. Robert M. Funkhouser, St. Louis, "Eugenics."

Second Baptist Germantown, Germantown Avenue and Upsal Street, Germantown, Rev. Charles H. Dodd, Pastor.
Morning, 10:30: Dr. H. A. Kelly, Baltimore, "Public Health."

Temple Baptist, Twenty-Second and Tioga streets, Rev. Thomas C. Bird, Pastor.
Morning, 10:30: Dr. Edward Jackson, Denver, "The Gospel of Health."

Third Baptist, Broad and Ritner streets, Rev. G. W. Drew, Pastor.
Morning, 10:30: Dr. Hugh Cabot, Boston, "The Control of Disease by Public Opinion."

Tioga Baptist, Broad below Tioga Street, Rev. Rutger Dox, Pastor.
Morning, 10:30: Dr. Jere L. Crook, Jackson, Tenn., "The Stewardship of the Body."

Wayne Avenue Baptist, Wayne Avenue and Queen Lane, Germantown, Rev. B. L. Newkirk, Pastor.
Evening, 8: Dr. Charles P. Emerson, Indianapolis, "The Message of Modern Medicine."

Woodland Avenue Baptist, Woodland Avenue east of Sixty-Fourth Street, Rev. Rittenhouse Neisser, Pastor.
Evening, 7: Dr. Richard C. Newton, Montclair, N. J., "The Human Body."

First Christian, Berks and Marvine streets, Rev. Irving S. Chenoweth, Pastor.
Morning, 10:30: Dr. Morgan Smith, Little Rock, Ark., "Public Health, the Paramount Issue."

Prichard Memorial Lutheran, Sixty-Third and Elmwood Avenue, Rev. J. William H. Heinty, Pastor.
Evening, 7:45: Dr. James P. Warbasse, Brooklyn, "The Socialization of Public Health."

Fletcher Methodist Episcopal, Fifty-Fourth and Master streets, Rev. R. H. Crawford, Pastor.
Evening, 7:45: Dr. Miles F. Porter, Fort Wayne, Ind., "A New Health Gospel."

Kynett Memorial Methodist Episcopal, Seventeenth and Cayuga streets, Rev. Harry P. Boughey, Pastor: Dr. G. V. I. Brown, Chicago, "The Health of Children and Its Influence in Moral, Physical and National Development."

Norris Square Methodist Episcopal, Susquehanna Avenue and Mascher Street, Rev. E. F. Hoffman, Pastor.
Evening, 7:45: Dr. Henry D. Holton, Brattleboro, Vt., "Social Conditions as They Affect Daily Life."

Olivet Methodist Episcopal, Sixty-Third and Grays Avenue, Rev. S. K McConnell, Pastor.
Evening, 7:45: Dr. J. C. M. Floyd, Steubenville, Ohio, "Social Waste."

Port Richmond Methodist Episcopal, Indiana Avenue and Thompson Street, Rev. G. B. Burnwood, Pastor.
Evening, 7:45: Dr. Thomas N. Gray, Newark, N. J., "Save the Babies."

Providence Methodist Episcopal, Front Street and Allegheny Avenue, Rev. Walter B. Smith, Pastor.
Evening, 7:45: Dr. C. E. Cantrell, Greenville, Tex., "Public Health."

Siloam Methodist Episcopal, East Susquehanna above Thompson, Rev. John C. Petre, Pastor.
Morning, 10:30: Dr. Lucien Howe, Buffalo, N. Y., "The Morality of Eugenics."

Summerfield Methodist Episcopal, corner Tulip Avenue and East Dauphin, Rev. F. A. Gacks, Pastor.
Evening, 7:45: Dr. Thomas S. Cullen, Baltimore, "Cancer."

Twenty-Ninth Street Methodist Episcopal, Corner Twenty-Ninth and York streets, Rev. John D. C. Hanna, Pastor.
Morning, 10:30: Dr. V. C. Vaughan, Ann Arbor, Mich., "The Evolution of the Superman."

Covenant Presbyterian Germantown, Chelten Avenue and Limekiln Pike, Rev. Harle W. Hathaway, Pastor.
Morning, 10: Dr. S. L. Jepson, Wheeling, W. Va., "The Fallacy of Faith Healing."

Emmanuel Presbyterian, Girard Avenue and Forty-Second Street, Rev. Edward S. Bowman, Pastor.
Evening, 7:45: Dr. Woods Hutchinson, New York, "Am I My Brother's Keeper?"

Ninth Presbyterian, Fifty-Seventh Street and Washington Avenue, Rev. John A. Higgons, Pastor.
Evening, 8: Dr. R. E. Brenneman, Pittsburgh, "Prevention of Cancer."

Puritan Presbyterian, Second and Clearfield streets, Rev. James G. Raymond, Pastor.
Evening, 7:45: Dr. E. A. Hines, Seneca, S. C., "Vital Problems in Preventive Medicine."

West Hope Presbyterian, Preston and Aspen streets, Rev. Charles E. Bronson, Pastor.
Evening, 7:45: Dr. H. W. Wiley, Washington, D. C., "Public Health."

West Park Presbyterian, Fifty-Fourth Street and Lansdowne Avenue, Rev. C. Grant Hopper, Pastor.
Evening, 7:45: Dr. Thomas D. Crothers, Hartford, Conn., "Scientific Side of the Temperance Question."

Overbrook Presbyterian, Corner City and Lancaster avenue, Rev. Guido Bossard, Pastor.
Evening, 8: Dr. C. S. Bacon, Chicago, "How to Prevent Sickness and Prolong Life."

Fourth United Presbyterian, Nineteenth and Fitzwater streets, Rev. J. C. Scouller, Pastor.
Morning, 10:30: Dr. Angus McLean, Detroit, "Health Education a State Duty."

Dales Memorial United Presbyterian, Thirty-Second, corner Cumberland, Rev. T. B. Turnbull, Pastor.
Morning, 11: Dr. John L. Heffron, Syracuse, N. Y., "Public Health and Public Morals."

All Saints Episcopal, Torresdale, Rev. A. R. Van Meter, Rector.
Morning, 10:30: Dr. W. C. Rucker, Assistant Surgeon-General, U. S. P. H. S., Washington, D. C., "The Church and Industrial Disease."

St. John's Episcopal, Brown Street near Third, Rev. George Chalmers Richmond, Rector.
Evening, 7:45: Dr. Joseph C. Bloodgood, Baltimore, "Control of Cancer."

Calvary Reformed, Twenty-Ninth and Lehigh Avenue, Rev. F. H. Fisher, Pastor.
Evening, 7:30: Dr. S. A. Knopf, New York, "How to Improve the Physical, Mental and Moral Condition of our Schoolchildren."

Heidelberg Reformed, Nineteenth and Oxford streets, Rev. Rufus C. Zartman, Pastor.
Evening, 7:45: Dr. A. L. Benedict, Buffalo, "Public Intelligence and Information as Factors of Public Health."

Mt. Hermon Reformed, Sixteenth and Wingohocking streets, Rev. C. B. Alspach, Pastor.
Evening, 8: Dr. B. R. McClellan, Xenia, Ohio, "Conservation of Child Life."

St. Mark's Reformed, Fifth Street above Huntingden Pt., Rev. George A. Sheer, Pastor.
Morning, 10: Dr. Charles H. Cook, Natick, Mass., "Public Health."

Girard Avenue Unitarian, Girard Avenue above Fifteenth Street, Rev. K. E. Evans, Pastor.
Morning, 10:45: Dr. Walter B. Cannon, Boston, "Social Responsibilities Arising from Medical Progress."

Bethel United Evangelical, Twelfth Street above Lehigh Avenue, Rev. John W. Slack, Pastor.
Evening, 7:45: Dr. L. Mervin Maus, Colonel Medical Corps, U. S. Army, Governor's Island, N. Y., "The Effect of Alcohol on Society."

All Souls Universalist, Forty-Seventh Street and Larchwood Avenue, Rev. Thomas W. Illman, Pastor.
Dr. G. M. Illman, Philadelphia, "Some Things the Public Should Know about Medicine and The American Medical Association."

In addition, through the courtesy of Archbishop Prendergast, the 104 Catholic priests of Philadelphia have been supplied with copies of a special address on "Our Progress in Medicine," by Dr. J. J. Walsh of New York. This address will be used by the parish priests as the basis for sermons on public health which will be delivered to the congregations on Sunday morning, June 21.

Correspondence

The Necessity of Adopting State Laws Regulating the Nature of the Liquids to Be Used for Embalming Purposes

To the Editor:—A recent experience brought forcibly to my notice the desirability that laws regulating the nature of embalming fluids should be enacted. In analyzing certain organs from a body in which there were many reasons to suspect arsenical poisoning, I was able to isolate large amounts of mercury and arsenic. Examination of the embalming fluid used in this case showed it to contain arsenic and mercury. On this account no case could be made out against the supposed administrators of the poison.

When one realizes that there are no restrictions in this country regarding the nature of embalming fluids to be used except in the states of New York, New Jersey and Michigan, the chance of detecting poisoners after the embalming is done is rather slim. This is especially true as regards the use of arsenic and mercury, as they are almost invariably present in the embalming fluids now used. In Michigan the law prohibits only the use of arsenic. In New Jersey the law provides that "no person shall employ for the purpose of embalming or preserving any dead human body, any arsenical solution nor any other poisonous agent which may, by its presence in the viscera, prevent the detection of criminal uses of said poisonous agents before the death of the individual occurred."

The state of New York has by far the best law regulating the nature of the embalming fluid to be used. It is as follows:

> No embalmer shall inject into any dead human body for the purpose of preserving, disinfecting or embalming the same any fluid that is not a thorough germicide in the proportions ordinarily used in embalming, that is, eight parts of fluid to 150 parts of body-weight, or that contains arsenic, zinc, mercury, copper, lead, silver, antimony or chloral or any substance or compound that contains either or any of them, or any poisonous alkaloid. Except that nothing in this regulation shall apply to the use of the above-named substances in any duly incorporated medical college or scientific institution by those having in their legal possession human cadavers intended to be used for the purpose of medical study or other legitimate purposes.

The New York regulations also prohibit the sale of embalming liquids containing the poisons above mentioned and provide for the bacteriologic examination, chemical analyses and certification of such liquids by the board.

It is most desirable that the other states in this country enact laws similar to those adopted in New York State. At the next meeting of the Pennsylvania legislature, I shall have introduced a bill similar to that adopted in New York. It may be of interest to observe that France in 1846 prohibited the use of arsenic in embalming fluids.

Jacob Rosenbloom, M.D., Ph.D., Pittsburgh.

[Comment.—Reference to the laws of the various states would indicate that our correspondent is too sweeping in his statement as to the lack of restrictions outside of New York, New Jersey and Michigan.

Illinois has a statute on this specific point, and while in some ways it may not be quite so effective as the New York law, it would seem to carry more weight, inasmuch as a penalty is attached. See Illinois Sess. Laws, 1907, page 257, and Chapter 31, Sec. 25, Illinois Sess. Laws, 1907.

Iowa vested its Board of Health with jurisdiction over embalmers. This board has promulgated a set of rules precluding the use of other material than that which is specified in the rules, from an examination of which it appears that the objectionable substances cannot be used. See Chap. 4. Rule 3, Regulations of the Iowa State Board of Health, on the care of the dead. See also Chap. 16, Title 12, Iowa Code, as to the powers of the State Board of Health.

South Dakota similarly vests its board with a like jurisdiction. This state has also forbidden the use of objectionable poisons. See Regulations of the South Dakota State Board of Health for 1913, Sec. 144.

Moreover, in a number of states in which the use of specific poisons is not forbidden, the ground is nevertheless fairly well covered in the provision that "it shall be unlawful for any person or persons to embalm . . . any dead body . . . in case the death is believed to be due to other than natural causes, or the cause thereof is unknown . . . without a proper death certificate which has been signed or approved by the coroner." See 31 and 32 of the statutes at large, U. S., Sections 683, 684. Also Kansas Embalmers Law for 1912, Sec. 9764; Chap. 181, Maine Sess. Laws, 1911, Section 12; Rules and Regulations of the Massachusetts Board of Embalmers for 1908, Sec. 9; Chap. 76, New Hampshire Sess. Laws, 1899, Sec. 5; Rules and Regulations of Rhode Island Board of Embalmers for 1912, Sec. 8; and Act 216, Vermont Sess. Laws, 1910, Sec. 7.

Finally, a number of states vest their boards of health with power to make regulations touching the proper care of the dead. See Conn. Code as amended, 1909, Sec. 1962; and rules of the Connecticut Board of Health, Feb. 5, 1902; Laws and Regulations touching on embalmers, Idaho, 1909, Sec. 6; Chap. 101, Minnesota Sess. Laws, 1905; Embalmers Law, Oregon, Sec. 9; and Chap. 420, Wis. Sess. Laws, 1905, Sec. 8; Cf. Wisconsin Code, Sec. 1408-1409.—Ed.]

McClure's Mistake

To the Editor:—The Journal is to be congratulated on the promptness with which it has commented on the article "Painless Child-Birth" in the June issue of *McClure's*.

As the article has much in common with the paper Krönig read before the Chicago Gynecological Society in November, 1913, entitled, "The Difference between the Older and the Newer Treatments by X-Ray and Radium in Gynecological Diseases," and published in the May issue of *Surgery, Gynecology and Obstetrics,* I was impressed that the data for the article in *McClure's* could not have been obtained without at least the passive cooperation of Krönig, Gauss, or both. I, therefore, wrote *McClure's* to inquire if the article had been gone over by Krönig and Gauss and published with their consent. Enclosed you will find a copy of the reply received from *McClure's*, which answers the editorial comment in The Journal, June 6, 1914, page 1815, which states that "If the publication was sanctioned by either or both of them it indicates an advertising initiative which bids fair to rival Friedmann," and will at least, if published, enlighten the members of the profession in this matter.

I read the article in *McClure's* with much interest, but was amazed that it had slipped through the editorial department, as it reads like an advertisement put out by a charlatan, or by a pharmaceutical house with its "ethical proprietary" advertised to the public.

S. E. Tracy, M.D., Philadelphia.

COPY OF LETTER RECEIVED FROM MC CLURE'S

McClure's Magazine
The McClure Publications
Fourth Avenue and 20th Street, New York.

Editorial Department.

May twenty-fifth, 1914.

Dear Doctor:

In reply to your letter of May nineteenth, I have to say that the article on "Painless Childbirth" in June McClure's, is technically correct and was read by Prof. Krönig and Dr. Gauss and published with their consent.

Yours very truly,

(Signed) J. Willard Connely

Dr. Stephen E. Tracy,
1527 Spruce Street.
Philadelphia, Pa.

Stubbornness.—Obstinacy is the result of the will forcing itself into the place of the intellect.—Schopenhauer.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THE ABSORPTION OF IRON FROM MINERAL WATERS

To the Editor:—In a Current Comment on this subject (The Journal, March 14, 1914, p. 856), there is a statement to the effect that both organic and inorganic iron can be absorbed and satisfactorily carry out the purposes for which they are ordinarily administered. Will you please give me references to the results which you have considered evidence as to the truth of that statement? I wish to present the proofs to a class in dietetics at the University.

Maria Madden, Lawrence, Kan.

Answer.—The evidence regarding iron absorption was mostly interpreted prior to the first clear demonstration that the bowel forms the most important channel for the excretion of this element. The failure to find any increase in the amount of iron eliminated with the urine by the kidneys after the ingestion of the element in some form or other was taken as an indication that it had not been absorbed. To-day we know that it can be both absorbed and excreted by the intestinal wall. For this reason references to the very early literature on the subject now have merely historical interest.

The conclusion that both forms of iron compounds, namely, the organic and the inorganic or ionized types, can be absorbed, is based on a variety of experimental evidences. The total intake and output of iron have been ascertained in some cases, and the favorable balance or retention of iron accepted as evidence. The intestinal mucosa has been examined by microchemical methods to demonstrate the entrance of ingested iron. Iron has been detected in the thoracic lymph soon after the introduction of ferric chlorid into the stomach. Various organs and even the entire bodies of animals have been examined to learn whether they have become enriched by the forms of iron compounds administered. Animals have been rendered anemic by hemorrhage and thereon the efficiency of the two kinds of iron derivatives in restoring the hemoglobin of the blood ascertained. Clinical observations on anemic patients have been drawn on to contribute to the same end.

The debate on the subject has been prolonged. The absorption of inorganic iron is now universally admitted. The question whether it can serve *directly* for hemoglobin formation has not been so easily answered. Some have inclined to the view that the absorbed inorganic iron acts merely as a stimulus to the hemopoietic organs to convert the organic forms into the blood pigment. The changing views of digestion formulated in recent years make it easier to understand that all iron probably becomes ionized in the intestine before absorption, and that synthetic transformations of the element occur later in any event, if it is to be retained in the organism.

An elaborate review of the subject, with a complete bibliography to 1906, has been prepared by Meyer, E.: Ueber die Resorption und Ausscheidung des Eisens, *Ergebn. d. Physiol.*, 1906, v, 698. An excellent discussion of the question is furnished in Sherman, H. C.: Chemistry of Food and Nutrition, New York, the Macmillan Company, 1911, p. 232, and following. Abderhalden's contributions are considered in his Text-Book of Physiological Chemistry, translated by Hall, New York, John Wiley & Sons.

THE BOAS EXTRA-ANAL TREATMENT OF HEMORRHOIDS

To the Editor:—Please describe the Boas extra-anal treatment of hemorrhoids.

A. M., Detroit.

To the Editor:—What is the Boas method for the extra-anal treatment of hemorrhoids?

A. J. Nossaman, M.D., Pagosa Springs, Colo.

Answer.—The Boas method consists of extruding the tumors, applying Bier's suction to them until a ring of edema forms, the time being about sixty minutes, and leaving the tumors outside the anus. The hemorrhoids shrivel in consequence of the interruption to the circulation and eventually disappear. The patients are confined to bed about two weeks. The following articles may be referred to:

Boas, I.: Extra-Anal, Non-Operative Treatment of Hemorrhoids, *Arch. f. Verdauungskr.*, 1909, xv, No. 2; abstr., The Journal, March 22, 1909, p. 1725.

Boas, I.: Bloodless Cure of Hemorrhoids, *München. med. Wchnschr.*, Jan 30, 1912; abstr., The Journal, March 9, 1912, p. 742.

Medical Economics

This Department Embodies the Subjects of Post-graduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

A PRACTICAL STATE-WIDE CAMPAIGN IN VENEREAL PROPHYLAXIS AND SEX INSTRUCTION, INCLUDING LEGISLATION AGAINST QUACKS

Oregon has had in operation for over two years a plan of education in venereal prophylaxis and sex instruction. The movement originated in Portland in 1911 in a call issued by a committee of the Y. M. C. A. for a meeting of citizens to combat the social evil in that city. An organization was effected which later merged into the Oregon Social Hygiene Society. Its efforts have been extended to the entire state, and the legislature and State Board of Health have cooperated in the work. The head of the society from the beginning has been the state health officer, Dr. Calvin S. White.

During the first year the work was confined almost entirely to Portland. Meetings were held among the young people, the parents, and in various business houses and industrial establishments. Talks on health topics were given, gradually introducing the subject of sex hygiene. State Board of Health notices regarding venereal diseases were given publicity and circulars were distributed through paymasters and other channels. Permanent and temporary traveling exhibits in the form of posters and panels were also provided in Portland and a large number of other cities of Oregon. These concerned the subjects of sex hygiene, venereal prophylaxis, "men's specialists" quacks and their fraudulent methods, and offered free advice by the State Board of Health.

LEGISLATION AFFECTING QUACKS

The state legislature in 1913 passed the following law in regard to quacks and quack advertising:

> Sec. 2095. Any person who shall advertise or publish any advertisement intended to imply or be understood that he will restore manly vigor, treat or cure lost manhood, lost power, stricture, gonorrhea, chronic discharges, gleet, varicocele or syphilis, or any person who shall advertise any medicine, medicinal preparation, remedy or prescription for any of the ailments or diseases enumerated in this act shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than $100 nor more than $1,000, or by imprisonment in the county jail for a period of not less than six months nor more than twelve months, or by both such fine and imprisonment. Any owner or managing officer of any newspaper in whose paper shall be printed or published any such advertisement as is described in this act shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than $100 nor more than $1,000, or by imprisonment in the county jail for a period of not less than six months, or by both such fine and imprisonment.

As a result of the passage of this law and of the steadily growing public sentiment against the methods of quack doctors, their business steadily decreased. The cooperation of the newspapers of Portland (with one exception) was secured so that a minimum of advertising space was available for the quack doctors. Many offices were closed and the business of others decreased. In 1911 grand jury indictments were obtained in Portland against a number of advertising quacks for violation of the state law which prohibits advertising to cure certain specific ailments. The newspapers of the state also generally support the movement, and only two or three continued to publish one or more advertisements of the "men's specialists." As shown by the report of the society, at the end of 1913 there were in the whole state only five of the old quack concerns, and in addition about five Chinese concerns which did a general practice. None of them advertise as "men's specialists"; all purport to treat both men and women for various diseases. The only remaining "museum of anatomy" in the state went out of business during the year. Among the quack institutions named in the poster campaign are the "Oregon Medical Institute," "Pacific Coast Medical Co.," "Dr. A. G. Smith, specialist," "Dr. Lindsay," "Dr. Warren," "Dr. C. K. Holsman," "Truthful Travis Oriental Remedy Co.," "Asiatic Acme Remedy Co.," and "J. J. Keefe, Ph.G., M.D."

In addition to the act regarding fraudulent practice and advertising, the legislature of 1913 lent its substantial support to the Oregon Social Hygiene Society in the form of an appropriation of $10,000, to be paid direct to the society for carrying on and extending its work throughout the state. The campaign is an example of the good results which may be achieved by united efforts encouraged by newspaper and legislative assistance.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama: Montgomery, July 14. Chairman, Dr. W. H. Sanders, Montgomery.

Alaska: Juneau, July 7. Sec., Dr. Henry C. De Vighne, Juneau.

Arizona: Phoenix, July 7-8. Sec., Dr. John Wix Thomas, Phoenix.

California: Los Angeles, June 16. Sec., Dr. C. B. Pinkham, 135 Stockton St., San Francisco.

Colorado: Denver, July 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Connecticut: New Haven, July 14-15. Sec., Dr. Chas. A. Tuttle, New Haven. Homeopathic: New Haven, July 14. Sec., Dr. Edwin C. M. Hall, New Haven. Eclectic: New Haven, July 14. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

Delaware: Dover and Wilmington, June 16-18. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

Florida: Palatka, June 17-18. Sec., Dr. E. W. Warren, Palatka.

Illinois: Chicago, June 23-25. Sec., Dr. C. St. Clair Drake, Springfield.

Indiana: Indianapolis, July 14-16. Sec., Dr. W. T. Gott, State House, Indianapolis.

Kentucky: Louisville, June 15-17. Sec., Dr. A. T. McCormack, Bowling Green.

Maine: Augusta, July 7-8. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

Mar[illegible] lar Board: Sec., Dr. J. McP. Scott, [illegible] nore, June 15. Sec., Dr. O. N. Duvall, [illegible]

Mississippi: Jackson, June 16-17. Sec., Dr. E. H. Galloway, Jackson.

Missouri: St. Louis, June 15-17. Sec., Dr. J. A. B. Adcock, Jefferson City.

Montana: Helena, June 30-July 2. Sec., Dr. Wm. C. Riddell, Helena.

New Hampshire: Concord, July 1-2. Regent, Mr. H. C. Morrison, Concord.

New Jersey: Trenton, June 15-16. Sec., Dr. H. G. Norton, 429 E. State St., Trenton.

New Mexico: Santa Fe, July 13. Sec., Dr. W. E. Kaser, East Las Vegas.

New York: June 23-26. Chief of Examinations Division, Mr. Harlan H. Horner, Department of Education, Albany.

North Dakota: Grand Forks, July 7. Sec., Dr. G. M. Williamson, Grand Forks.

Oklahoma: Oklahoma City, July 14. Sec., Dr. John W. Duke, Guthrie.

Oregon: Portland, July 7-9. Sec., Dr. L. H. Hamilton, Medical Bldg., Portland.

Rhode Island: Providence, July 2-3. Sec., Dr. Gardner T. Swarts, State House, Providence.

South Dakota: Deadwood, July 14. Sec., Dr. Park B. Jenkins, Waubay.

Texas: Austin, June 23-25. Sec., Dr. W. L. Crosthwait, Waco.

Utah: Salt Lake City, July 6-7. Sec., G. F. Harding, 405 Templeton Bldg., Salt Lake City.

Vermont: Burlington, July 14-17. Sec., Dr. W. Scott Nay, Underhill.

Virginia: Richmond, June 23-26. Sec., Dr. Herbert Old, Norfolk.

Washington: Seattle, July 7. Sec., Dr. C. N. Suttner, Baker Bldg., Walla Walla.

West Virginia: Elkins, July 1. Sec., Dr. S. L. Jepson, Wheeling.

Wisconsin: Milwaukee, June 29. Sec., Dr. John M. Beffel, 3200 Clybourn St., Milwaukee.

Wyoming: Laramie, July 9-11. Sec., Dr. H. E. McCollum, Laramie.

MEDICAL EDUCATION *

Kendric C. Babcock
Dean of College of Liberal Arts and Sciences of the University of Illinois
URBANA, ILL.

No single feature of improvement in higher education in the last seven years better deserves reiterated emphasis and approval than the progress in medical education. The changes of the last year give renewed cause for satisfaction. The continued decrease in the number of medical schools, from 162 in 1906 to 106 in 1913, is fresh evidence of sound appreciation of the vital necessity of most thorough, exacting and scientific training in laboratories, and actual, practical apprenticeship under expert direction in large hospitals.

By the action of the Council on Medical Education of the American Medical Association, acting in cooperation with the Association of American Medical Colleges, a new milestone in the progress of medical education was established in the spring of 1913. Step by step the curriculum of a standard medical school has been extended to cover four years; admission has advanced from the modest requirement of the completion of high-school education to requirement of a preliminary college year, which should include at least physics, chemistry and biology. Forty-three medical colleges at the close of the period covered by this report were enforcing at least this requirement; others have announced that it will go into effect in 1913; still others have signified their intention to put it into operation in 1914. By these schedules there should be after January, 1914, seventy-one medical colleges requiring for entrance one year of college work, including courses in physics, chemistry, biology and a modern language. But this is not the whole story. Thirty of them, including those which require a bachelor's degree for admission, now demand two years of work in a college of liberal arts, in addition to a high-school course covering four years, and nine have announced the adoption of the two-year collegiate requirement, to become effective before the end of 1915.

The Council on Medical Education, by its announcement of the basis on which medical colleges will be rated in the council's classification as "Class A+, acceptable medical colleges," and "Class A, colleges lacking in certain respects, but otherwise acceptable," has fixed and defined this new or collegiate requirement of a single year (The Journal, Aug. 23, 1913, p. 582). This requirement for admission becomes effective on and after Jan. 1, 1914. The Association of Medical Colleges expresses its requirement in slightly different terms—"one year each of physics, chemistry and biology of college grade, each not less than eight hours." While these two associations have no legal authority to compel the acceptance of their standards, the value of the recognition accorded to an institution by placing it in Class A+ or Class A is so great that ambitious institutions cannot afford to defer compliance longer than is absolutely necessary. It should be noted in this connection that the information on which classification by the Council is made or admission to the Association of Medical Colleges accomplished is based on the direct personal examination of the work of institutions listed by an agent or by a committee of these two organizations. The rating, therefore, is not a paper-made affair, but one which commends itself because of its thoroughness and because it is continually kept up to date by visitation, conference and correspondence.

Confronted by the enormously increased cost of maintaining a first-class medical school, the movement to surrender medical education to the state university or to put it under the care of the state has gone on apace during the year under discussion. The medical college of Drake University, Des Moines, Iowa, was transferred by a cordially amicable arrangement to the State University of Iowa; the medical college of Willamette University, Salem, Ore., has been discontinued and all medical education in Oregon will be carried on by the University of Oregon, in Portland. The state of South Carolina has adopted and made appropriations for the Medical College of the State of South Carolina, located at Charleston. An agreement has been perfected by which the University of Alabama will take over the Birmingham Medical College and make of it the postgraduate department of the university's medical school. The College of Physicians and Surgeons of Chicago, which has had an intermittent affiliation with the University of Illinois, without receiving any state aid, however, has recently turned over all its property to the university and gone out of existence as a separate corporation. State aid, which was once defeated by the veto of the governor and once by a decision of the supreme court of the state, seems now assured. The two medical schools in Richmond, Va., the Medical College of Virginia, which has received a small subsidy from the state, and University College of Medicine, which must not be confused with the medical school connected with the University of Virginia, at Charlottesville, have united as the result of long negotiations.

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* Part of report on Higher Education in Chapter II of the 1913 report of the U. S. Bureau of Education.

The financial resources of the medical schools have shown gratifying increases. State appropriations have been generous both for maintenance and for buildings, while gifts running into the millions for hospitals, for instruction and for endowment of research fill the record of the year. The campaign of the Western Reserve University, of Cleveland, in the past two years resulted in a total of $1,533,000 of endowment for the medical department of that institution. During the past year the University of California received an aggregate of nearly $480,000 toward a total of $600,000 for teaching hospital, and the George William Hooper Medical Endowment, consisting of property valued at considerably more than $1,000,000, perhaps ultimately $2,000,000, for purposes of medical research.

New Rules in Illinois

From Dr. C. St. Clair Drake, secretary of the Illinois State Board of Health, we have received the following notice of an amendment to the rules and regulations relative to the administration of an act to regulate the practice of medicine in Illinois, in force July 1, 1899. The notice is dated May 26, 1914:

Examinations of candidates for state certificates authorizing the practice of medicine and surgery in Illinois will be held in Chicago, in January, May, June and October, as far as practicable, each year.

All examinations will be in writing and will embrace the subjects hereinafter stated, these subjects being covered in ten papers, each paper being made up of ten questions, as per the following grouping: (1) chemistry, etiology and hygiene; (2) physiology and neurology; (3) anatomy; (4) materia medica and therapeutics; (5) pathology and bacteriology; (6) surgery; (7) physical diagnosis, ophthalmology and otology, pediatrics; (8) obstetrics; (9) gynecology, laryngology, rhinology and medical jurisprudence; (10) practice of medicine.

A candidate to be entitled to a state certificate authorizing the practice of medicine and surgery in Illinois must obtain in his examination a general average of not less than 75 per cent., with a rating of not less than 60 per cent., in any one paper, as set forth in the preceding paragraph.

This amendment is to take effect and become operative in all examinations given by the Illinois State Board of Health, after July 1, 1914.

Connecticut March Report

Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the practical and written examination held at New Haven, March 10-11, 1914. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 20, of whom 14 passed and 6 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Yale Medical School	(1911)	87.2
Baltimore Medical College	(1909) 75.1,	75.6
Johns Hopkins University	(1911) 77 5; (1913)	88.1
Maryland Medical College	(1911) 75.8; (1912) 75.1; (1913)	82.4
University of Maryland	(1912)	81
John A. Creighton Medical College	(1913)	81.7
Albany Medical College	(1894)	77.3
Woman's Medical College of Pennsylvania	(1913)	82.6
University of Vermont	(1912) 77,	81.6
FAILED		
College of Physicians and Surgeons, Baltimore	(1913)	67.5
Maryland Medical College	(1913) 63.3,	65.5
College of Physicians and Surgeons, Boston	(1908)	65 5
University of the South	(1902)	63.5
University of Catania, Italy	(1912)	63.3

Book Notices

A TREATISE ON THE DISEASES OF WOMEN. For Students and Practitioners. By Palmer Findley, B.S., M.D., Professor of Gynecology, College of Medicine, State University of Nebraska. Cloth. Price, $6 net. Pp. 954, with 670 illustrations. Philadelphia: Lea and Febiger, 1913.

This treatise is an outgrowth of the author's "Diagnosis." The subject-matter is divided into thirty-four chapters, arranged in order rather different from that usually employed, which necessitates considerable overlapping of subjects. Yet if we view this fact from the position of the student who is reading the subject for the first time, we shall agree that it is no detriment to have the repetitions. Indeed, it may be a source of advantage. A wide knowledge of the literature is shown in nearly every page, especially in the chapters developed from some of the author's comprehensive papers. It is to be regretted that a bibliography is not given. There is a remarkable freedom from unsupported and dogmatic assertions, and the book is scholarly in tone. A critical examination shows much to commend and little to criticize. The work seems so strong that attention is called to certain points to which we may object with the hope that they may be corrected in future editions of the book.

The chapters on hemorrhage are arranged to give the student a clear idea of the menstrual phenomena. The author, however, like so many others, has incorporated the old myth that the Caucasian race is more subject to carcinoma and the African to fibroids (p. 21). This statement receives but little support (p. 576) where he states that Kelly and Williams, who have had abundant opportunity to make reliable observations, deny that the negress is preeminently susceptible to fibroids. Even were the result contrary, the observation of 357 cases should not permit of conclusions which may be applied to an entire race. It is surprising to note that in the treatment of dysmenorrhea, treatment by stem pessaries is dismissed in four lines of disfavor, while Pozzi's operation, which to some authorities has no fundamental basis whatsoever, is pictured in four three-quarter-page drawings. Incidentally, Findley is not a believer in tents for cervical dilatation, restricting his choice to the Hegar dilators. Fatigue is not mentioned as a cause for backache, and the author apparently believes that douching will cure leukorrhea—thus marring, to some extent, a very good chapter.

The chapter on sterility shows breadth of view. The effect of acid secretions is considered; extract of corpus luteum is advised in the artificial menopause. A chapter on the examination of the blood is wisely inserted, yet on first glance would appear to be unnecessary in a work of this type. The same statement applies to the chapter on the microscopic examination of scrapings. A valuable chapter on non-operative methods of treatment precedes the preparation for operation. Massage and pressure therapy are discussed quite fully, and organotherapy and serum therapy have a page. Polak's results in the treatment of pelvic infections with vaccines are quoted as encouraging. The absence of diagrams illustrating the method of replacing a retroposed uterus both in the description of non-operative methods and in the discussion of retroversions is to be regretted. They would seem quite as valuable to the student as the illustration of the man in an undershirt painting iodin on an abdomen (p. 245). The author uses Schleich's solution for local anesthesia. The method of putting on dry sterile gloves is splendidly shown on page 253. This is a most valuable illustration and one which could be shown (unfortunately) to the majority of operating-room nurses to the benefit of their technic. How often nurses, in holding gloves for the operator to thrust his hand into, manage to touch the bare hand and thus (frequently) contaminate their gloves! At the same time the illustration on page 274, which depicts one finger in the urethra and the other in the rectum to demonstrate an atresic vagina, should be condemned. At present, methods which demand the insertion of a finger into the urethra have no place in modern gynecology. Unfortunately the students frequently remember the illustrations longer than the text, and some novitiate will undoubtedly attempt such a barbarous procedure. With this exception, the difficult subject of anomalies of the vagina and uterus is ably handled. The order of presentation of the displacements of the uterus does not appear logical, even though it has the authority of like arrangement in several Scottish and English texts. Retroversion with descent is the natural prologue of procidentia and is best considered before it. The discussion of the various postures which a displaced uterus may assume is not wisely inserted, as it is apt to confuse the student so that he remembers the details rather than the principles. It is only fair to say, however, that in comparison with many American texts the discussion of retrodisplacements here given is simplicity itself.

Findley advises the Todd-Gilliam operation, as well as the Webster, the illustrations of which (Baldy) do not show the ligaments spread out fan-shape on the back of the uterus as they must be to prevent recurrence, and indeed as they are described in the text. In the chapter on inflammation of the uterus the author appears committed to the older nomenclature. Thus he describes many erosions (non-cancerous) which would be far better described as what they really are, eversions, and appears unwilling to accept the splendid work of Hitchman and Adler at its face value. Therefore, he gives a clinical and anatomic classification of endometritis, and in the latter retains the old divisions of Ruge and Veit. The treatment of puerperal infection is well given. He does not use the curet, and does not recommend hysterectomy. He does stimulate with strychnin, and does not suggest the need of obtaining rest and sleep, with opium if necessary, nor does he suggest outdoor treatment.

Findley still uses Noble's compilation of 2,274 cases to enforce his arguments. He quotes the much-quoted statement of Bayle, misspelled in the text as Boyle (p. 576), that 20 per cent. of women more than 35 years of age have fibroids. This statement made prior to 1813 cannot be traced beyond the point where Bayle, in an article in the Dictionnaire des sciences médicales, says in making the necropsy on 100 women of more than 35 years in age, 20 per cent. will be found to have fibroids. It is time we dropped such loose statements from our literature.

This work, which combines safe treatment and scholarly consideration may be commended as one of the best volumes of its class in recent times. The publishers also deserve congratulation, as they have done their part well in the preparation of an interesting text.

Grundsatze für den Bau von Krankenhausern. By Obergeneralarzt Dr. Thel, Inspekteur der 5. Sanitatsinspektion. Second Edition. Paper. Price, 6 marks. Pp. 170, with 88 illustrations. Berlin: August Hirschwald, 1914.

The title of this book indicates that the author is attempting to set forth the principles to be used for the planning and construction of hospitals. It is illustrated with a number of plans of existing institutions and detail plans of operating departments and isolation buildings. The larger plans illustrate German military hospitals which do not contain arrangements of particular value to Americans. The work begins with an interesting history of hospitals. It contains a number of tables in regard to the number of hospital beds in European cities, the cost per bed of many well-known hospitals, areas of buildings per bed, the division for different services and other statistical matters, all of which are taken from larger works such as "Das Deutsche Krankenhaus" by Prof. Dr. Grober; but those who do not possess this work will find the smaller one helpful and reasonable in price. The book does not treat of the management or organization of hospitals and is intended more as a guide to builders. Inasmuch as the author is not an architect or builder his advice in regard to building matters is not technically correct in many instances, and is also incomplete. The illustrated method of deafening floors cannot be used in this country. Some recommendations appear unusual to Americans; for instance, "gas-pipes are to be placed on wall and ceiling surfaces. They are not to be placed within the mason work, so that leaks can be found easily and repairs made quickly." This does not speak well for German pipe installations, for such troubles are exceedingly rare in American cities.

Two statements by Dr. Thel appear particularly noticeable, namely: "Building good hospitals without possessing great experience is not possible in this specialty." "The experience frequently employed by communities in appointing commissions for the building of hospitals, who may make an inspection trip for the purpose, but who have little experience in this field, is a poor method to proceed with the construction of a hospital." The author also calls attention to the necessity of the proper attention to ventilating apparatus by saying, "The help and nurses must be fully instructed in regard to the ventilating apparatus in order that it obtain proper attention and good operative results; the help and nurses must be watched continuously in this matter." That the Germans persist in their contention that hospitals should not have many stories is shown by Dr. Thel's statement that a height of two stories should be exceeded only in exceptional cases.

Diagnostic Symptoms in Nervous Diseases. By Edward Livingston Hunt, M.D., Instructor in Neurology, College of Physicians and Surgeons. Cloth. Price, $1.50 net. Pp. 229, with 54 illustrations. Philadelphia: W. B. Saunders Company.

This was written to supply the demand for a manual containing the salient points and leading symptoms of the principal nervous diseases without the laborious search involved in consulting larger text-books. The author has carried out his purpose admirably, and has furnished in a concise, yet readable and entertaining manner, a complete cross-index, so to speak, to the regular text-books. All important symptoms and signs are taken up, with the methods of eliciting them, and a list of the diseases in which they are encountered. The constant use of such a book will enable any physician with a reasonable knowledge of the fundamentals of neurology to avoid errors and to make his own diagnoses correctly in a great many cases which he otherwise could not disentangle without a consultation with a specialist.

This little book, together with one standard text-book, will meet the every-day needs of the student and practitioner better than a whole shelf of large works.

Diseases of Children. A Manual for Students and Practitioners. By John McCaw, M.D., R.U.I., L.R.C.P., Senior Physician, Belfast Hospital for Sick Children. Cloth. Price, $3.50 net. Pp. 524. New York: William Wood & Co., 1914.

This is an effort to put the subject of diseases of children in such a form that busy practitioners and medical students will grasp it readily and be encouraged to go further in the study of pediatrics. It appears to be an eminently fitting book. While the subject-matter is condensed, it is well systematized and the important points are well brought out. More than any other book which has come from the British Isles, it shows a definite knowledge of the work which has been done by Americans and gives full credit for it. The chapters on infant feeding are well written, and while no attempt is made to recommend methods, many are described properly and the practitioner left to take his choice. The chapters on diseases of the respiratory tract, are especially complete and practical.

Diagnostic Methods. A Guide for History Taking, Making of Routine Physical Examinations and the Usual Laboratory Tests Necessary for Students in Clinical Pathology, Hospital Interns and Practicing Physicians. By Herbert Thomas Brooks, A.B., M.D., Professor of Pathology, University of Tennessee, College of Medicine, Second Edition. Cloth. Price, $1. Pp. 82. St. Louis: C. V. Mosby Company, 1914.

Laboratory methods are clearly described in this convenient handbook and so far as a somewhat thorough investigation has shown, it is reliable.

Miscellany

Combined House and Office for the Physician

In *Suburban Life*, for May, Charles Vaughan Boyd discusses the building of a distinctive type of combined residence and office for the physician. Generally speaking, the house is composed of two units, represented by the family quarters and the service department. In a physician's residence, three units are necessary on account of the requirements of office space. In planning such a residence for the physician, care must be taken not to place undue emphasis on any one portion. The pleasure of the family cannot be ignored in locating the living-rooms, nor can the welfare of the servants be overlooked. It is also not wise to relegate to inconspicuous position the rooms actually devoted to the physician's office. It is therefore believed that the best location for such a residence is at the intersection of two streets. By this procedure, the house gains in two important details: First, there is assured an abundance of light and air. Second, there is provided an equally desirable position for the family entrance and the office entrance.

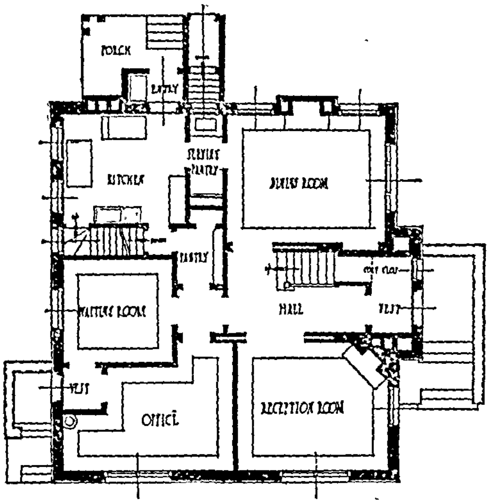

Fig. 1.—Combined house and office at Hamilton, Canada. For description see text.

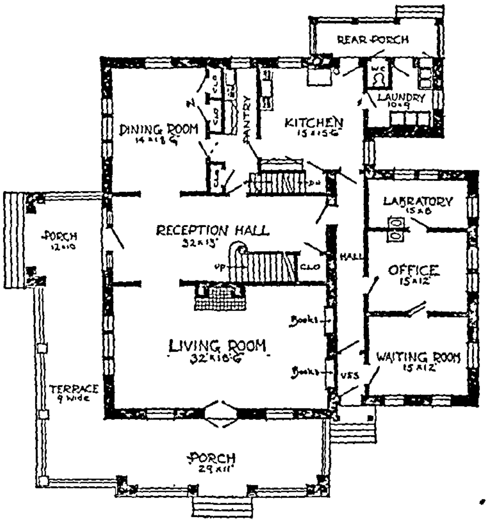

Fig. 2.—Residence and office at Ambler, Pa.

Figure 1 represents the ground floor of a physician's house in Hamilton, Canada. It is located on a corner, the house and the office being entered from different streets. The office entrance, it will be seen, is not at the front of the house. A small vestibule serves as means of communication with both the waiting-room and the office. Each of these rooms is also connected with an inner hall which, in turn, is connected with the living and service quarters. In this plan, only two rooms are allowed for the office, the waiting-room and the consultation-room. The plan, however, is very compact and permits of a convenient arrangement of the living-rooms. In this house, a large living-room is provided on the second floor, which overlooks the intersecting streets.

Figure 2 is the plan of a residence and office at Ambler, Pa. It represents the remodeling of an old house, the office wing being added. It has a separate office entrance at the front of the house. The plan as a whole, if not particularly well balanced, affords a convenient arrangement of the office which consists of waiting-room, consultation-room and laboratory with a separate hallway running the length of all these rooms and affording entrance to the kitchen. The office hall communicates with the reception hall of the residence. The hall running the entire length of the office rooms permits patients to leave the consultation-room without reentering the waiting-room.

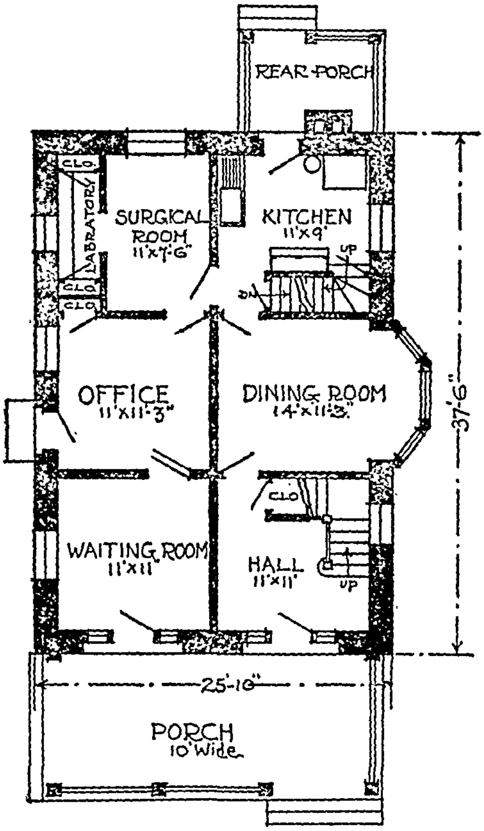

Fig. 3.—Combined office and house at Fort Washington, Pa.

Figure 3 represents a Fort Washington, Pa., house, showing the office and residence portion well isolated in a plan of small area. The office portion has three conveniently arranged rooms, the waiting-room in front, consultation-room next, and surgical-room at the rear which connects with the kitchen. The surgery also has connected with it a laboratory. Plenty of closet room is provided in both consultation-room and surgery. This office does not allow of the exit of the patient without going through the waiting-room, but slight changes in the plan would remedy this. In this plan the living-room would again have to be placed on the second floor, as only hall, dining-room and kitchen are provided for on the first floor.

Figures 4 and 5 represent arrangements which would prove convenient for houses fronting two streets. Only two rooms are provided for office purposes. In these plans the living-rooms are all on the first floor, which, of course, necessitates a larger house.

Figure 6 is the plan of a large house at Melrose, Pa. The feature of this plan is the reception hall between the waiting-room and the office, which would perhaps afford greater privacy in the consultation-room but less convenience in the handling of patients. The kitchen is placed back of the office rooms, and in the dining-room must be entered through a pantry which is more or less desirable according to the point of view. This is an elaborate and expensive house. The office and residence portions are well isolated.

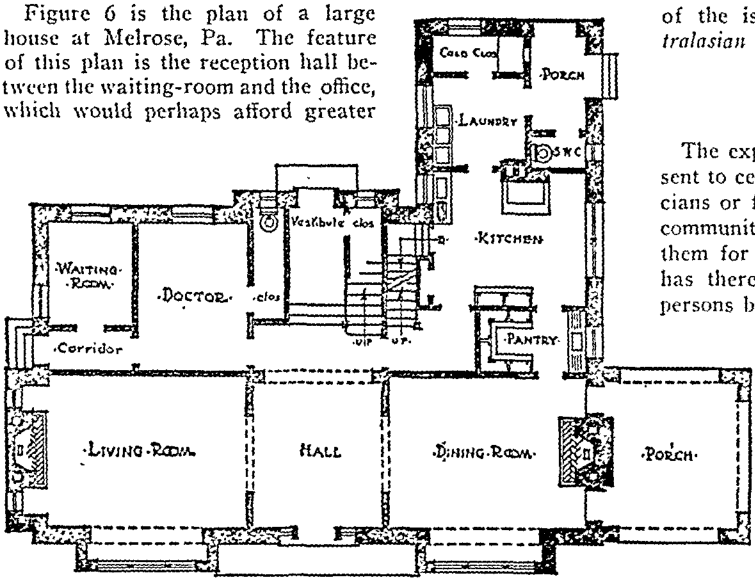

Fig. 4.—Example of combined house and office at St. Martins, Pa.

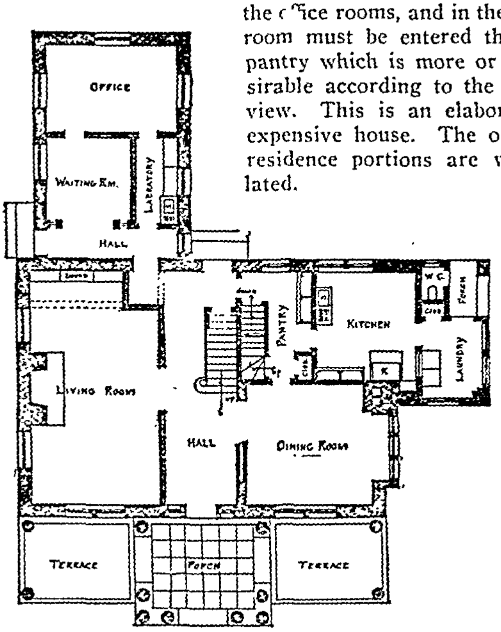

Fig. 5.—A combination at Cynwyd, Pa.

Cultivation of Camphor in Formosa

The staple industry of the island of Formosa is the cultivation of camphor, the exports of which during 1912 advanced from 6,613,700 pounds, worth £354,100 ($1,720,926), to 8,649,300 pounds, worth £553,600 ($2,690,496). The principal importing countries were the United States, with 2,370,300 pounds; Germany, with 2,243,400 pounds; Japan, with 1,694,000 pounds, and the United Kingdom, with 1,003,000 pounds, while France, India and Austria also took considerable quantities. In view of apprehension as to gradual exhaustion of camphor forests in Formosa, considerable afforestation schemes are under way. From 1913 about 3,000 acres annually for twelve years are to be planted with young trees; the cost for the first year is placed at about £11,800 ($57,348). The development of the mountainous interior and the gradual subjugation of the savage territory are stated to have disclosed new camphor districts which are being carefully investigated and preserved for future use. It is considered that the camphor resources of the island will be equal to all future demands.—*Australasian Med. Gaz.*

Indigent Consumptives in the West

The expense and the care of poverty-stricken consumptives sent to certain portions of the West and Southwest by physicians or friends is a heavy burden on the taxpayers of those communities. Many arrive with insufficient funds to support them for even a short time and become public charges. It has therefore been proposed to provide hospitals for such persons by federal legislation. A bill is now before congress known as the Shafroth-Callaway bill which provides for the use of abandoned military reservations and other government property in the Southwest as hospitals for such patients. These are to be operated under the direction of the United States Public Health Service. The bill also provides that the tuberculosis hospital at Fort Stanton, N. Mex., may be used for the care of consumptives who have contracted their infection in another state and are a menace to interstate commerce. As an indication of the burden these cases may become, it was found that in one Texas city during twenty years there were 6,959 deaths from tuberculosis, and 33 per cent. of these persons had been residents of the city less than six months, and a much larger percentage residents less than three years. As an amendment to the Shafroth-Callaway bill it has been suggested that a certain percentage of the cost of maintaining an indigent consumptive should be charged against the city or county from which he comes. This would discourage sending such patients away as could be cared for more cheaply and as well at home. It would also stimulate the establishment of local hospitals.

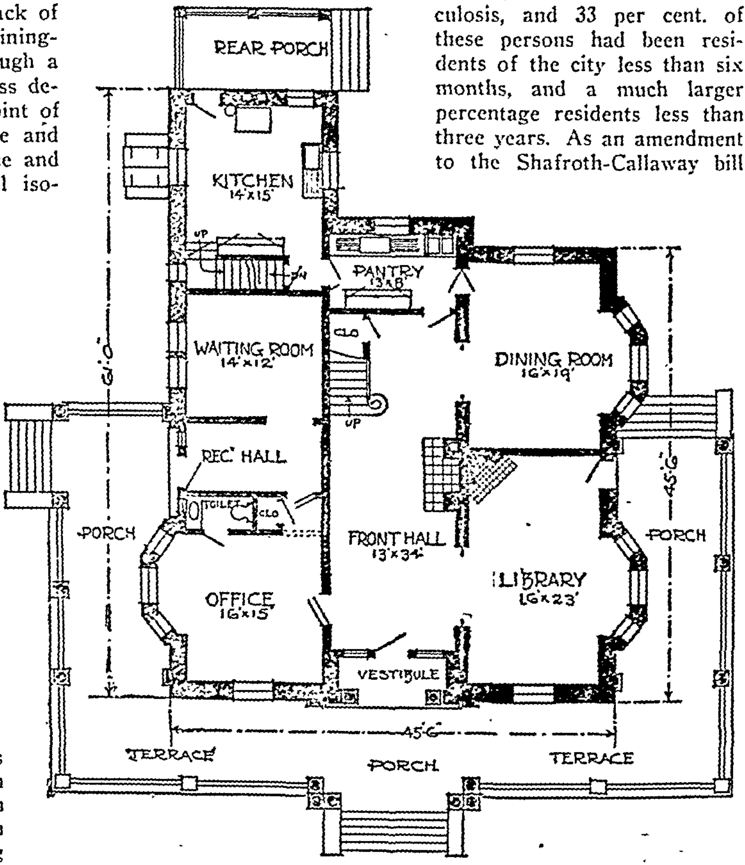

Fig. 6.—Elaborate combined residence and office at Melrose, Pa.

Medicolegal

No Evidence of Malpractice in Treatment of Eye

(Phebus vs. Mather (Ill.), 181 Ill. App. 274)

The Appellate Court of Illinois, First District, affirms a judgment for the defendant in this action for alleged malpractice in the treatment of an eye. The court says that the plaintiff testified that, after her right eye had been a little inflamed for three or four days, which she attributed to a cold, and she had got a cinder or something in her left eye, she went to the defendant's office, after which the eye continued to get rapidly worse; that he scraped around it with a wooden toothpick, and two days later he told her she must go to the eye and ear infirmary. She also testified that on the occasion of the use of the toothpick her mother had said to the defendant that if he did not think he could cure the eye she would send the plaintiff to a specialist, to which the defendant replied that it was nothing serious and that he knew his business. The defendant, on the other hand, testified that the first time he saw the plaintiff's eye he advised her to go to a hospital, it being apparent that she was suffering from purulent ophthalmia, caused by a gonorrheal infection. It also appeared from the evidence that at that time the plaintiff's husband was suffering from gonorrhea. The law seems to be well settled that in order for the plaintiff to recover in a case of this character it is incumbent on him to prove that the treatment administered by the defendant was negligent or unskilful, and also that the alleged injuries were the result of such treatment. The general rule also is that mere proof that a good result was not obtained is, of itself, no proof or evidence of negligence or lack of skill, of which, and of the fact that the injuries complained of resulted therefrom, there must be affirmative proof. Usually, and especially in eye cases, such proof can be established only by the testimony of experts skilled in the medical profession, and cannot be made by lay witnesses. Nor does the court think that a question for the jury was raised by the testimony of the physician who treated the case at the infirmary, that he thought there would have been a better chance had the case come earlier under his care, but he did not know whether the eye could have been saved. To permit a jury of laymen to speculate as to what result that "better chance" might have produced was clearly improper, especially in view of the expert physician's statement that he had no opinion on that subject. There was no competent testimony tending to show either negligence in the treatment by the defendant, or that the injury complained of was the result of such negligence.

Compensation for Volunteered Emergency Services

(Schoenberg vs. Rose (N. Y.), 145 N. Y. Supp. 831)

The Municipal Court of the City of New York, Borough of Manhattan, Sixth District, says that during the trial of an action against a corporation the president thereof while testifying fell from his chair unconscious. The plaintiff in this case, a physician making a specialty of treating the eyes, ears, nose and throat, being in attendance as a witness for the other side, volunteered his services, and, with another physician similarly present, sought to restore respiration, but finally pronounced the man dead. The president left a large estate, and each of the physicians presented a bill for $500, but the court adopts the value placed on the plaintiff's services by the executors' experts and gave him a judgment for $15, which it considers the reasonable value of such services, the latter not being difficult.

The court says it is of the opinion that, while the financial condition of a patient does not alone affect the abstract question of the value of a physician's services, it is a proper element entering into the question as to what charge or what reduction in the charge shall be made by him by reason of such financial condition. So a patient of no means, or of limited means, may prove that his circumstances and station in life are such as to render a physician's charge exorbitant and out of all reason and proportion to the patient's ability to pay, while the same charge to a person of large means would not be considered unreasonable. The financial condition of a patient is an element that it may be assumed is considered by both physician and patient when the services are contracted for, rendered, and accepted, and may also be considered by the court in determining the reasonableness of the charge; and that element should apply to a case in which there is and was no contract, but a mere fiction of law creating one, else, in a case where services are rendered to an unconscious man who never recovers, the charge against his estate might be so great and unreasonable as to be out of all proportion to the value of the estate.

This court is unable to draw a distinction as to the right of recovery between a case in which the physician is called by a stranger or spectator and one in which he proceeds to treat a person while unconscious, or *in extremis,* without being asked to do so. The right to recover in both cases is the same, and the argument to support such right could be carried to great length. In the court's opinion there is an implied contract in both cases, and, if the physician chooses to stand on his legal rights to recover, he is entitled to enforce those rights and must receive what his services are reasonably worth, regardless of what may be considered the ethics of the medical profession in such a case, with which the court is not concerned. When duty requires the physician to give his aid, and he has given it, he may expect payment by reason of the promise created by law from the patient to do so, although the patient never asked for the aid or consented to it being given. In an emergency case, requiring immediate attention to save life, the physician when called, or when he volunteers his services, should not stop to inquire by whom he will be paid, or to make it known that he expects to be paid. It would be inhuman to do so or to give the subject a thought. Offering his aid does not establish the fact that he intended his services to be gratuitous. Whether or not he did offer aid is a question of fact.

Authority for Physical Examination Does Not Include Taking of Roentgenograms

(Lasher vs. S. Bolton's Sons (N. Y.), 146 N. Y. Supp. 321)

The Appellate Division, Third Department, of the Supreme Court of New York, reverses an order directing the plaintiff, a female infant, who was seeking to recover damages for personal injuries, to submit to the taking of a roentgenogram of her right foot. The court says that the plaintiff, through her attorney had consented that a physician might make a physical examination of the foot in behalf of the defendant, and later the order reversed was granted. The court is clearly of the opinion that there is no foundation in law for the order. The examination of witnesses before trial is purely statutory, and authority for a physical examination of a party to an action does not include authority to take photographs or roentgenograms, especially when the defendant has already, by consent of the plaintiff, had the advantage of a physical examination. The general purpose of the statute was to change the rule of the common law, and under well-established rules the authority is not to be extended beyond the clearly expressed intention of the statute. The statute expressly provides that, in the event that the person to be examined is a female, she shall be entitled to have such examination before physicians or surgeons of her own sex, and this rule is not limited to adult females but applies to all females. The order here under consideration simply directed a particular physician, a man, to take a roentgenogram of the plaintiff's right foot, though it appeared from the record that the physician was not a roentgenologist, and the order seemed to contemplate that it should be actually taken by some other person, for it was to be done under the direction of this physician, who was not authorized under the rules of practice to act as a referee, and who had, according to the language of the order, "already made a physical examination of the infant plaintiff for and on behalf of the defendant."

Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, June 22-26.

American Academy of Medicine, Atlantic City, June 19-21.
American Climatological Association, Atlantic City, June 19-20.
American Gastro-Enterological Association, Atlantic City, June 22-23.
American Laryn., Rhin., and Otol. Society, Atlantic City, June 19-20.
American Orthopedic Association, Philadelphia, June 18-20.
American Proctologic Society, Atlantic City, June 22-23.
American Urological Association, Philadelphia, June 18-20.
Conf. of State and Prov. Boards of N. America, Washington, June 19-20.
Montana State Medical Association, Lewistown, July 8-9.
New Jersey Medical Society, Spring Lake, June 29.
North Carolina Medical Society, Raleigh, June 16.

AMERICAN DERMATOLOGICAL ASSOCIATION

Thirty-Eighth Annual Meeting, held in Chicago, May 14-16, 1914

(Continued from page 1839)

Purpura Annularis Telangiectoides

Dr. George M. MacKee, New York: This affection attacks young male adults, although two cases have been noted in infants. The eruption is always situated on the anterior and lateral surfaces of the lower limbs, below the knees, with occasional lesions above the knees and on the arms, and very rarely on other portions of the body. The appearance of the eruption is nearly always preceded by rheumatic pains. Otherwise there are no subjective symptoms. The disease is divided into three fairly well-defined stages: first, telangiectatic; second, purpuric and pigmentary, and, third, atrophic. Regarding the differential diagnosis and etiology, many cases give a positive tuberculin reaction, but at the same time many do not. Inoculation experiments have been negative. These facts, together with the clinical and histologic pictures, would seemingly rule out the possibility of tuberculosis. Occasionally, in syphilis, an annular purpuric rash is present, which is due either to the syphilis or possibly to the mercury. This eruption is usually limited to one small area, is evanescent in character and disappears without atrophy and with temporary pigmentation. The etiology of the disease is unknown, but is thought to be either a neurosis or a reaction to some toxic substance. It can be differentiated from any known dermatosis, and is undoubtedly an entity.

DISCUSSION

Dr. A. Schalek, Omaha: Whatever this skin disease may be, I certainly do not think the name purpura a good one. It does not agree with any of the characteristics of purpura as we know them.

Dr. A. Ravogli, Cincinnati: It is a beautiful thing to place new names and to try to designate diseases of rare quality by these new names, but we must remember, too, that we have acne necrotica and tuberculids, but whether they have just the same formation of pustule with resulting scar as that described by Dr. MacKee, I do not know.

Dr. W. H. Mook, St. Louis: I have seen four or five of these cases in the last seven years, and placed them under the classification of atrophic dermatosis of unknown origin. One of the cases had quite an ulceration, about the size of a dime, that existed for something like two years, and refused to heal up with any sort of treatment.

Dr. M. F. Engman, St. Louis: My attention was first called to this condition several years ago by Dr. Mook, and since then I have seen several cases and have called them "Mook's disease." Then, in looking over the literature about six or eight months ago, I came across some articles about this disease. Most of the cases reported in the literature occurred in railroad men and those who were on their feet a great deal.

The Abderhalden Technic as Applied to the Diagnosis of Syphilis

Dr. H. R. Varney, Detroit: From seventy-five cases examined experimentally the following conclusions are drawn: The specificity of the Abderhalden technic applies to syphilis. Syphilitics have in their blood-serum enzymes which react with the protein of the organism. Tissue derived from active human lesions is more specific than syphilitic tissue of the rabbit. Mixed infection in the human lesion gives rise to error, as shown in our cases of sinus disease, furunculosis, etc. Further work will be required to determine whether all syphilitics have the power of developing ferment, and at what stages of the disease the test is present or absent. We believe that polyvalent antigens prepared from several strains of pure culture of the spirochete offer the best hope for further success with this technic. The degree of success with the test varies in proportion to the care and precision exercised in its execution.

DISCUSSION

Dr. Udo J. Wile, Ann Arbor, Mich.: I have undertaken some experiments with the Abderhalden technic in another condition this year, and it was a most difficult technic to carry out. At least, I found it so. The specificity of the spirochete antigen is extremely interesting, in view of the specificity of the test in this as well as other diseases.

Dr. H. R. Varney, Detroit: The Abderhalden technic is easy as compared with the original Wassermann, in my opinion.

A Study of the Spinal Fluid with Reference to Involvement of the Nervous System in Secondary Syphilis

Dr. Udo J. Wile and Dr. John Hinchman Stokes, Ann Arbor, Mich.: A large proportion of all patients in the secondary period of syphilis, in our series 63 per cent., showed evidences in the spinal fluid of the involvement of the central nervous system. From the special examinations made, we must conclude that this does not represent the whole number who will at some time show, or who have already shown, a reaction on the part of the central nervous system. The absence of findings indicative of meningeal reaction in a single examination cannot be taken as conclusive evidence of freedom from central nervous involvement. Any of the findings, lymphocytosis, increased albumin and globulin content and positive complement-fixation test, may be present alone or in varying combinations, and each indicates involvement of the central nervous system. Comparing this high ratio of early involvement with the relatively low ratio of later involvement, as compared with the total number of syphilitics, we must conclude that the early involvement is mainly a transitory manifestation. The central nervous system is particularly likely to show involvement in cases in which the eruption is papular or follicular in type. Marked subjective symptoms, such as headache, insomnia and nervous irritability, were usually accompanied by positive findings in the fluid in our series. In a general way, cases in which there had been little or no treatment showed a higher percentage of involvement than those in which vigorous treatment had been inaugurated. Involvement of the central nervous system was found in a relatively high percentage of those cases in which the general health was considerably affected. The commonest finding indicative of meningeal reaction was the increased globulin and albumin content, the positive Wassermann ranking next, and lymphocytosis last. As an aid to diagnosis and as a possible guide to prognosis, the value of the spinal puncture in cases of secondary syphilis can scarcely be overestimated.

DISCUSSION

Dr. J. A. Fordyce, New York: I have for a long time been convinced that there are various strains of the spirochete, and that there is a strain that has a special predilection for the nervous system. Dr. Nichols of the Army Medical School of Washington has recently published a very suggestive article on a strain of spirochete that has a given infective power. He has studied the biologic characteristics of this organism, and I think has pretty definitely shown that there is a spirochete which has a predilection for the nervous system. The majority of neurologists believe that there are not more than from 5 to 10 per cent. of syphilitics who show involvement of the nervous system. If a larger percentage than that show involvement in the early stage of the disease, as Dr. Wile has said, it must be a passing infection, a hyperemia of the meninges, which passes off. I have been making a study of the spinal fluid in late syphilis, in tabes, paresis and various forms of cerebrospinal syphilis for the past two years, but in the last three or four months I have examined the spinal fluid in about thirty cases in various stages of the secondary period of the disease, for the globulin content and lymphocytosis, as well as for the Wassermann reaction. I started out firmly convinced that we should find from 40 to 50 per cent. of involvement of the nervous system, but to my surprise have found it considerably smaller than that. Repeated punctures should be made in the same case, as the fluid may be negative this week, and a month later positive. We should make the examination in the later period of the secondary stage, and especially after treatment with salvarsan. One, two or three injections of salvarsan are apt to develop a latent reaction in the fluid, and you are more apt to get changes after the patient has been under treatment for some time.

Dr. J. F. Schamberg, Philadelphia: Dr. Wile's studies show us with what frequency the nervous system is involved, often at a very early stage of the infection. It is necessary to study not only the blood in these cases, but also the cerebrospinal fluid, in order to prevent later disastrous results affecting the nervous system.

Dr. Udo J. Wile, Ann Arbor, Mich.: I think, as Dr. Fordyce says, that most of these nervous conditions are transitory phenomena, and that for the most part energetic treatment directed to the general syphilis serves to clear up the syphilis of the central nervous system. It is impossible to say just how many of these cases in which the cerebrospinal system is early involved become our late cases of tabes and paresis, or as to whether or not they fall into this group. It is highly probable that of this number 5 per cent. are drawn from these cases of early involvement.

The Use of Calcium Lactate in the Treatment of Certain Dermatoses

Dr. Charles J. White, Boston: Believing that calcium had shown decided curative powers in certain instances, I decided to make a thorough therapeutic trial of the drug. I have prescribed calcium in many different conditions, but by elimination of the unsatisfactory tests the final trials have been limited to the following diseases and conditions: hyperhidrosis, pernio, herpes simplex, erythema multiforme, urticaria, livedo, purpura and angioneurotic edema. In addition to the calcium salts, patients have been asked to partake as freely as possible of food rich in calcium, and have been urged to avoid raw fruits and all acid foods, for it has seemed to me that many persons suffering from the suspected diseases have been large consumers of these articles of diet. External treatment has been prescribed in all cases, a factor which vitiates the scientific value of the whole work, but it must be borne in mind that most of these patients were referred by general practitioners who had been unsuccessful in previous treatment, and, furthermore, that these patients were mostly wage-earners who deserved as speedy restoration to health as was possible. Also, the work was necessarily hampered by the fact that all these patients were ambulants, who obey or break laws as the spirit moves them. In summing up my experiments, I think it seems fair to state that calcium is certainly not a specific for any of the diseases mentioned in any sense of the word, but it is a drug which may render distinct and most welcome service in any one of them, and a drug which should always be tried in obstinate examples of the conditions above cited.

DISCUSSION

Dr. W. A. Pusey, Chicago: Ever since Wright began to hypnotize us with his fascinating theory, I have been interested in the coagulation time of the blood and the use of calcium salts in the conditions suggested by Wright. I have made it a plan for many years in cases of such intoxications as urticaria, erythema multiforme, purpura and chronic eczemas to make a routine coagulation-time test, and I first became disappointed in that. I have never been able to make out any distinct characteristic relationship between the coagulation-time and the occurrence of any of these conditions, so that I had no delayed coagulation-time as a basis on which to use calcium salts. I used calcium salts for many years in the intractable cases of this sort, especially urticarias, erythema multiforme and intractable eczema, and then let it fall into disuse. Then I took it up again, and must confess to having had practically no evidence of its value. I first used calcium chlorid and later calcium lactate. If Dr. White, however, who is such a careful observer, has found calcium lactate useful in such an intractable condition as hyperhidrosis, I am going to try it again.

Dr. M. B. Hartzell, Philadelphia: I have tried the calcium salts extensively, and regret that I have yet to see a single instance in which I thought my patient had been benefited in the remotest degree. Still, one man's experience does not count for very much, and I shall take renewed courage and try it again.

Dr. D. W. Montgomery, San Francisco: I have given calcium lactate in a very interesting case of erythema multiforme due to the *Bacillus coli communis,* and obtained no appreciable amelioration of the symptoms. I have not tried the drug in hyperhidrosis, but I should think, from the vast number of causes of hyperhidrosis, that it would be problematic if it would do good; but it is all a chance, and we might do good by using it.

Dr. David King-Smith, Toronto: Calcium lactate has been tried in various conditions in the hospital with which I am connected, not only in dermatologic cases, but others as well, and I think I may say that it has been rather disappointing. Probably the best results are obtained, however, when the drug is given in 20-grain doses three times a day, for two days, then stopped for two days, and then repeated for the six doses; if it is going to do any good, as a rule, it will have done it then.

Dr. Charles G. White, Boston: I have also had a good many failures in the use of this drug, but have had better success than those who have discussed my paper. I do not think the giving of the calcium lactate is the whole thing. You must cut out the acids and give foods that contain calcium, and, above all, you must stop the use of magnesium at the same time. The two drugs are opposed in their results, and many failures have come because you are giving magnesium to clear up the bowels, and calcium with the idea of curing the disease. They neutralize each other and you get no effect.

(To be continued)

NEW YORK ACADEMY OF MEDICINE

Meeting Held April 16, 1914

The President, Dr. William M. Polk, in the Chair

Medical Aspects of Treatment of Pyloric Stenosis in Infancy

Dr. L. Emmett Holt: In my series of 57 cases, 52 were breast-fed infants; of these 40 had nothing but the breast and 12 had mixed feeding. Hence bad feeding can scarcely be invoked as a cause of this condition. Of 55 cases in which the sex was noted there were 49 males and 6 females. The mortality was 55 per cent.; 28 patients were operated on, with 14 deaths; 29 cases were treated medically, with 17 deaths. The whole crux of the question between medical and surgical treatment of pyloric stenosis seems to be: Are the symptoms and condition such as to make it probable that the patient will or will not live long enough for the pathologic condition to subside? There are medical as well as surgical risks. The indications for operative treatment are (1) no diminution of the vomiting or the gastric peristalsis by stomach washing and diet; (2) a steady loss of weight of 1 or 2 ounces a day; (3) marked gastric retention;

and (4) absence of fecal stools. My greatest regret is that operation was delayed in so many of my cases and in some was not done at all. To persist with medical treatment week after week when forcible vomiting and marked peristalsis persist and when the weight shows only a slight loss, seems to me to be incurring far greater risk for the child than with operation.

Pyloric Stenosis in Infancy Treated by Gastro-Enterostomy

Dr. William A. Downes: My series embrace 21 cases, 16 males and 5 females. Seventeen were breast-fed entirely; 3 were partly breast-fed and partly bottle-fed, and 1 was bottle-fed. A typical posterior gastrojejunostomy was done in all the cases. I offer the following conclusions: 1. Hypertrophic pyloric stenosis is congenital to the extent that there is an increase in the thickness of the circular muscular fibers at the pylorus. The presence of this thickened muscle-fiber reduces the lumen of the pylorus; therefore, the stomach in order to empty itself contracts more forcibly than normal. This soon causes the mucous membrane to become thickened and edematous, and to assume a more or less spiral arrangement as it passes through the narrowed pyloric channel of from ½ to ¾ inch. The result is a valvular action which gradually produces complete closure of the pylorus. The question as to whether or not the pylorus will admit a probe or catheter at operation or necropsy is of little consequence when weighed against the clinical evidence of complete obstruction. 2. There can be no doubt that there is sufficient time between the onset of symptoms and the appearance of complete obstruction for careful observation and the carrying out of any medical measures likely to prove of benefit, provided, of course, that the early symptoms have been properly interpreted. The fear, however, that the condition may have existed longer than has been suspected, and that the vitality of the baby is not so good as appearances would lead one to believe, make me feel that operation is indicated in every case of hypertrophic stenosis as soon as the diagnosis is made. Should depression or early evidence of shock be present, immediate operation is demanded. 3. The babies coming to operation in good condition suffer little or no shock, their convalescence is straightforward, and they are at once restored to normal health. My experience in this respect corresponds with that of other operators.

DISCUSSION

Dr. Charles L. Scudder, Boston: It has been demonstrated that the medical treatment by feeding and by drugs in true cases of tumor stenosis has not been satisfactory. If there is a true tumor present, the sooner surgical measures are instituted the better for the immediate condition and the better for the future of the baby. Cases of stenosis not due to tumor are supposed to be occasioned by a certain degree of pyloric spasm. The tumor cases of obstruction are real mechanical obstructions. The tumor occludes the lumen of the pylorus, and it is probably of congenital origin. Quite recently there was reported one case of a new-born baby in which there was a congenital pyloric tumor. This fact is of considerable importance in the proof of the congenital origin of this tumor. The contrast between the rapid improvement in weight, in general appearance, in growth, and in general development in the cases of pyloric tumor operated on and those cases experimented on by feeding and drugs is so great that one can hardly understand the attitude taken by certain medical practitioners who advocate long experimental feeding in true tumor cases. When the diagnosis of congenital pyloric stenosis is made in these little babies, the earlier surgical measures are instituted the more rapid will be the recovery from the emergency starvation and the more sure will be the saving of the life of the child. Children with only partial obstruction will develop symptoms later than those with more complete obstruction. Children with almost complete obstruction will demand surgical interference earlier than those with less obstruction. In the group of cases in which the diagnosis is doubtful, that is, in that group of babies difficult to feed, it will always be justifiable and proper to experiment for a limited time with skilled feeding in order, if possible, to arrive at a satisfactory diagnosis. I believe that comparatively few cases of so-called pyloric spasm without the presence of a true tumor will require surgical treatment.

Dr. Henry Koplik: There are patients who will recover without operation. Patients with a hard palpable tumor should be operated on as soon as possible. Peristalsis is not an indication for operation; many patients have peristalsis and recover without operation. In others there is peristalsis long after recovery. Some cases present marked peristalsis and are very mild in their course. On the other hand, the amount of stenosis is very important as well as the knowledge of just how much food passes through the pylorus into the duodenum. When no great amount of food passes through the pylorus, the sooner the operation the better. I do not agree that all cases should at once be handed over to the surgeon.

Dr. H. M. Richter, Chicago: Could we agree as to the underlying pathologic condition it would be easier to decide what course to pursue. Among my 24 cases, 19 were diagnosed before operation as hypertrophied pylorus with resulting obstruction, and in 5 cases the diagnosis before operation was spasm. Of the 19 cases, 18 showed a palpable tumor before operating. In the 19 cases there was in each a definite fixed hard tumor. In 5 cases a diagnosis of spasm was made on the basis of the peristaltic waves of the stomach and the starvation stools. The underlying pathologic condition, however, is surely quite different from that found in the cases showing hypertrophy, and probably does not constitute an entity, but is variable. There is a definite intestinal obstruction in the true hypertrophic cases. The mortality of gastro-enterostomy is high, but it is being gradually lowered. The results published show that the death-rate is being lowered continuously. Operative treatment, carried out sufficiently early, enables the breast-fed infants to be saved. The duration of treatment in the non-surgical cases is prolonged, and in a large proportion of these cases the mothers lose their milk.

Dr. Howard Lilienthal: I have noted that the location of the tumor in these infantile cases is exactly at the pylorus. The pyloric veins appear at or near the central part of the mass. I have operated in five cases. Two patients died, one from hemorrhage following operation on the mastoid which had to be performed three days after the gastro-enterostomy, the other from some error in technic which resulted in a breaking down of the wound.

Dr. Linnaeus E. La Fetra: My personal experience with this condition comprises fourteen cases. They can be divided into two groups: (1) those in which spasm alone, or spasm with more or less hypertrophy, is a prominent factor; and (2) those with spasm and hypertrophy in which the hypertrophy is or becomes the most important factor. It is altogether possible that the cases change from one group to the other, the long continuance of the spasmodic attacks inducing an increase in the hypertrophy. In all the severe cases more or less hypertrophy is present. Also it is probable that the presence of an original hypertrophy which might be small in amount results in spasm which increases the hypertrophy. Of the cases in the first two groups, those of spasm alone or spasm with some hypertrophy, there were eight patients. All of these recovered without operation except one. The one patient that died had a severe spasm with marked peristaltic waves, but no tumor. Necropsy showed a normal pylorus. Of the cases in which hypertrophy was the prominent feature I have had six; five of these patients were operated on and four died. I should consider that operation is absolutely indicated as the only hope for recovery in all cases in which hypertrophy is the prominent feature.

Dr. Ellsworth Eliot: I think we are all agreed that irrespective of pathologic conditions the cases can be divided into three groups: (1) cases which are mild in their course and amenable to medical treatment, and which are under the care of the pediatrician; (2) the hopeless cases that come to the surgeon in the later stages of the disease; and (3) the doubtful cases in which one is undecided as to the propriety of continuing the medical treatment or resorting to surgical measures. I am quite willing to depend on the pediatrists and to be guided by their advice.

Dr. Alfred F. Hess: I have seen about twenty cases of spasm of the pylorus. We have to deal with two groups of cases: (1) organic stenosis with tumor; and (2) functional stenosis. Organic stenosis is of congenital origin. In the fetus the pylorus is large and forms a very great part of the stomach, greater than it does in infancy. If one looks at the picture of the pylorus of the fetus, one is reminded of pyloric tumors. The only way to settle this question is to find these cases in dead-born children, to find instances of pyloric tumors. We should examine the dead-born children more carefully if we wish to solve this problem. Some patients die within one or two weeks, although the operation was successful. I think that this is due to overfeeding, to alimentary intoxication. If a gastro-enterostomy is performed and a large amount of milk is fed into the intestines, alimentary intoxication results, with fever and death.

Dr. Max Einhorn: I have had four cases of congenital stenosis of the pylorus in infants, and success was attained in two of them by stretching the pylorus. This method deserves to be used more. The stretching was performed in all four of my cases. In two patients there was a real stenosis and not a spasm and successful results followed this stretching of the pylorus. In two of the cases the results were just as good as could have been obtained by surgical measures. After the stretching the stomach began to be emptied and the children began to improve. These were cases of pyloric obstruction. In two cases I succeeded in stretching the pylorus, but the patients died. There was no stenosis but rather a spasm. Stretching was done in these two cases, but without the desired results.

Dr. William A. Downes: No surgeon, whether urged by a pediatrician or other medical adviser, would attempt to operate in pyloric stenosis in infants on the basis of tumor and peristaltic wave alone. Data from every point of view should be had before resorting to operative interference.

ASSOCIATION OF AMERICAN PHYSICIANS

Twenty-Ninth Annual Meeting, held at Atlantic City, N. J., May 12 and 13, 1914

(Concluded from page 1838)

The Inspiratory Exaggeration of the Dicrotic Wave in Pericarditis

Dr. Albert E. Taussig, St. Louis: Ordinarily, the dicrotic wave in the radial sphygmogram does not vary in size with the phase of respiration. In pericarditis, however, it becomes more or less exaggerated, sometimes greatly so, during inspiration. In all of five cases studied from this point of view, the phenomenon was observed. Anatomic considerations render its occurrence readily explicable. It may have diagnostic significance.

The Influence of Benzol Inhalations on Experimental Pulmonary Tuberculosis in Rabbits

Dr. William Charles White, Pittsburgh, Pa: Benzol benzene, is the best solvent for the fat portion of the tubercle bacillus. It extracts a greater percentage of fat than any other single solvent will take from the bacillary substance. Because benzol can easily be vaporized and utilized as an anesthetic, it was thought possible in this way to dissolve the living tubercle bacillus after its entrance into the pulmonary capillary system by way of the ear-vein and before the formation of the tubercle. It was hoped in this way to obtain a solution of all the living portions of the tubercle bacillus within the body and the possible development of a retardation of the process produced by a fatal dose of tubercle bacilli and the establishment of an immunity to a further dose of the organism. Contrary to the desire expressed in the theory, I found that in every instance whether the infecting tubercle bacilli were of low virulence or of high virulence, the resulting infection in rabbits was very much more severe in those treated by inhalation of benzol than in those infected with the same weight of infecting organism.

The symptoms produced in rabbits by the inhalation of benzol were similar to those described by Sollmann for the inhalation of gasoline vapors. Animals may be given benzol inhalations, 5 c.c. every second day for periods up to three and even four weeks, without resulting in death. The resulting leukopenia varies very much. The lowest white-cell count was 3,800 per cubic millimeter. The red-cell anemia is very variable, the lowest in our series being 3,600,000 per cubic millimeter. The majority retained a normal red-cell count. The blood-smears and blood-counts exhibited changes similar to those described for the injections of benzol by Selling and others.

In all, thirty-three animals were used, twelve controls and twenty-one treated. The pathologic findings in many of these animals were very striking. In 30 per cent. of the treated animals, after receiving 5 c.c. inhalations of benzol every second day for three weeks, and then being allowed to live two or three weeks longer, extreme enlargement of the spleen was found. In one instance the spleen measured 13 by 3.5 by 3 cm., and the circumference of its largest part was 9.5 cm. There was a large hemorrhage in the substance of this spleen. In all twenty-one treated animals there was only a single case of purpura with hemorrhages into the mucous membrane of the stomach and bowel. There were marked fatty changes both in the liver and in the kidneys of the treated animals.

Some Relations of the Brain and of the Olfactory Apparatus to the Processes of Immunity

Dr. Henry Sewall, Denver: Guinea-pigs sensitized to horse-serum may be desensitized by residence in a horse-stable. It is probable that this reaction may be rapidly achieved through the olfactory sense or more slowly by absorption through the respiratory membrane. The period of antianaphylaxis is of less than two days' duration. The converse of this, sensitization of normal guinea-pigs in stable-air, I have not been able to achieve. Removal of part of the brain of a sensitized guinea-pig produces much more severe shock than the same amount of injury in a normal animal. This shock is apt to be followed by a period of antianaphylaxis of short duration. Section of the olfactory nerves within the cranial cavity preceding the brain operation by a day or more abolishes the tendency to shock. Such nerve section in the normal animal also seems to reduce the shock arising from definite brain injury. [Depression of the olfactory sense through cocain and the resemblance of symptoms from poisoning with this drug to those of anaphylaxis are discussed]. The body as a whole may be sensitized through the peripheral application of horse-serum after a definite latent period which does not seem to be affected by previous general sensitization.

The Normal Amount of Diastatic Ferment in the Urine and Feces and Its Variation in Diseases of the Pancreas

Dr. Thomas R. Brown, Baltimore: In healthy persons the diastase-content of the urine falls within quite definite limits. Markedly small amounts of this ferment in the urine, in the absence of renal changes, are suggestive, although not diagnostic, of pancreatic disease. The stool, if a rigorously exact method is carried out as to food (milk), purgative employed, preservation of specimen, estimation of ferment, etc., also furnishes a content within definite limits. Extensive carcinoma of the pancreas showed no diastase in the tube of least dilution in the method which I used, and this absence of ferment should prove of great help in the diagnosis of this condition. In chronic pancreatitis, diastase is present in the stool, but in markedly diminished amounts. In achylia gastrica the diastase-content of the stool was practically normal in all the cases examined.

Aconite as a Vasodilator

Dr. William Hanna Thomson, New York: I regard aconite as the most efficacious vasodilator in chronic interstitial nephritis when given systematically in full doses. It at once reduces the blood-pressure, produces a full and compressible pulse, and greatly increases the percentage of the elimination of urea in interstitial nephritis. The most important action of aconite, when administered in interstitial nephritis, is to increase the elimination of urea. The beneficial effects of aconite are particularly pronounced in mental derangements of the nature of melancholia with high blood-pressure.

The Subcutaneous Administration of Oxygen as a Therapeutic Measure

Dr. John McCrae, Philadelphia: For the last two or three months I have used oxygen in this way, which I believe is the rational method of administering it and I believe that properly placed, it is useful. I employed it in a surgical case after a severe operation. The patient looked as though he might die in a short time. His respiration was 60; he had extreme edema of the lungs, extreme pallor, profuse perspiration, and signs of impending death. With repeated injections of oxygen the man recovered. I have used oxygen in thirty cases and believe it should be a part of the armamentarium of the surgical operating-room.

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2. **Uterine Growths and Exophthalmic Goiter.**—Elsner calls attention to the large proportion of uterine growths associated with goiter, typical and atypical exophthalmic goiter, and mentions the frequency of the atypical cases, to encourage the thorough examination of all the organs of the body in the presence of goiter, large or small. He says that if this be done, the number of associated anomalies will prove surprising.

3. **Disease of Nerves of Cauda Equina.**—The histories of the five patients seen by Kennedy and Elsberg are almost exactly alike in the nature and sequence of incident. In the third and fourth patients the symptoms were progressive in each for about two years, in the second for about one year, and in the first for but six months. Pain was present in all from the beginning; it was sharp, shooting, and burning in character, and was felt almost entirely in the backs of the thighs and in the calves. By the last patient it was described also as needling and cramp-like. In the first four patients the pain was, at the beginning, strictly unilateral, being felt in both legs after the lapse of some weeks or months. The leg first involved remained throughout the illness more affected than its fellow. All but the third patient complained much of tingling and numbness, involving sometimes the feet, sometimes the knees, and in the last two patients the entire surface of the lower extremities. Atrophy of the anterior tibial muscles, with loss of the power of dorsiflexion at the ankle, was a prominent feature in four of the series; in the exception there was a spasticity of the lower extremities, which was more marked on the right than on the left side.

The objective sensory changes showed an astonishing uniformity; in all, the main incidence of the disease had fallen on the lowest roots of the cauda, the sacral roots were always affected, and with the utmost severity. In one patient all the lumbar roots were also involved though to a somewhat lesser degree than were their more lowly placed fellows. In three only had the lowest lumbar roots become diseased to such an extent as to abolish or depress function. The more markedly the lower sacral roots were involved the more complete was the sphincter disturbance. The disorganization of the functions of the bladder and rectum was complete in all but the third case, in which precipitancy and frequency of micturition prevailed. The first third and last cases showed that disease had produced destructive changes in the cord itself; in them the plantar reflex was of the pathologic-extensor type. The abdominal reflexes were present in all the patients. In but one were the ankle-jerks obtained in the affected limbs. The knee-jerks became lost, as in the last case, coincident with the upward progress of the disease.

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The conditions found at operation were the following: In two patients a large number of the caudal roots and in the other three all the roots were swollen, congested, and of a bluish-red color. The changes seemed to be due to an intense hyperemia on the surface of the nerves, and extended into the nerves themselves. Adhesions between the nerve-roots were present in only one case; in the others the only changes were swelling and discoloration. In all five patients the inner surface of the dura was smooth and glistening, and without signs of inflammatory change though in two of them a few small areas of hyperemia were observed. The axis-cylinders showed various degrees of swelling, loss of normal staining reaction, some of them showing granular degeneration, fragmentation and absorption.

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9. **Rôle of Carotid Arteries**—Hunt urges that in all cases presenting cerebral symptoms of vascular origin, the main

arteries of the neck be carefully examined for a possible diminution or absence of pulsation. In the large majority of cases, a sudden obstruction may occur without softening producing nothing more than mild and transient cerebral symptoms. On the other hand, this may so cripple the cerebral circulation in advanced life that functional deficiencies result and the one hemisphere may be more predisposed to softening processes than the other. Hunt emphasizes the occurrence of diminished pulsation of the carotid on the side of the softening as an occasional symptom in cases of thrombotic hemiplegia, and suggests that the impairment of circulation through the carotid so interferes with the general circulation of the hemisphere as to predispose to thrombus formation and encephalomalacia. He also particularly emphasizes the occurrence of unilateral vascular changes, pallor or atrophy of the disk with contralateral hemiplegia in obstruction of the carotid artery. Unilateral headaches and vertigo, especially in assuming the upright posture, epileptiform attacks, failing memory, attacks of threatened hemiplegia, cerebral intermittent claudication, are some of the vascular symptoms which should suggest the possibility of carotid obstruction.

10. **Wolff-Junghans' Test for Gastric Cancer.**—When carefully performed and interpreted Smithies says the Wolff-Junghans' test for demonstration of dissolved albumin in gastric extracts was positive or suspicious in 80 per cent. of his series of gastric cancer. In this series it was a more constant finding in gastric extracts than were absent free hydrochloric acid, the presence of lactic acid, and the glycytryptophan test. It was rather more constant than tests for occult blood and the demonstration of gastric motor inefficiency. It was not so consistent in its manifestation as the demonstration of organisms of the Boas-Oppler group or the increase in the formol index. In extragastric malignancy, gastric syphilis and nephritis the Wolff-Junghans' test is inconstant. In the differentiation between malignant and non-malignant achylias the Wolff-Junghans' test, when interpreted in connection with other clinical and laboratory data, is of considerable value. Positive reactions are rarely obtained in the achylias of primary anemia, simple achylia gastrica, and simple achlorhydrias when such are unassociated with gastric motor inefficiency. Simple gastric and duodenal ulcers, especially when accompanied by pyloric stenosis or gastric atony, may give confusing resources to the Wolff-Junghans' test. The presence of blood in gastric extracts may be a factor in the production of certain atypical positive tests.

11. **Jaundice in Tuberculosis.**—Cruice has seen 7 cases of jaundice among 1,748 cases of chronic pulmonary tuberculosis. He believes that jaundice occurring in the course of chronic tuberculosis is probably due to some form of tuberculosis of the liver, either extrahepatic or intrahepatic. The grade of the jaundice is helpful in surmising the pathologic condition, intense jaundice being probably due either to pressure of tuberculous glands on the extrahepatic ducts or to some form of the solitary tubercles of the liver; milder forms being produced by a miliary tuberculosis of the liver.

12. **Degeneration of Islands of Langerhans.**—Six cases of hyaline degeneration of the islands of Langerhans in which there was no evidence of diabetes occurred in subjects aged over 37 years. In addition to the hyaline changes there were found in every case more or less sclerosis of the insular capillaries, and a chronic interacinar pancreatitis of the type usually encountered in diabetes mellitus. The explanation of this phenomenon, which has seemed most likely to Cecil is that hyaline degeneration of the islands, may occur up to a certain point without producing diabetes. When a number of islands sufficient to interfere with carbohydrate metabolism have been involved, diabetes ensues. The hyaline changes in the island of Langerhans, Cecil says, have been associated in every case with hyaline degeneration of the renal glomeruli. The lesions in both instances are possibly referable to sclerosis of the smaller vessels supplying these structures.

American Journal of Public Health, Boston

May, IV, No. 5, pp. 391-476

14 Sociologic Aspects of Health Department Reorganization in New York State. J. A. Kingsbury, New York.
15 Sociologic Aspects of Reorganization of Cleveland Health Department. R. H. Biship, Jr., Cleveland.
16 Reorganizing Minneapolis Health Department. F. Bass, Minneapolis.
17 Bacteriologic Methods for Meat Analysis. J. Weinzirl and E. B. Newton, Washington, D. C.
18 Bacteriologic Analysis of Hamburger Steak with Reference to Sanitary Standards. J. Weinzirl and E. B. Newton, Washington, D. C.
19 Milk-Borne Epidemic of Diphtheria. H. H. Waite, Lincoln, Neb.
20 Calcium Hypochlorite as Disinfectant of Water. E. J. Tully, Madison.
21 Methods of Fighting House Fly. E. C. Levy, Richmond, Va.
22 New Shipping Outfit for Iced-Water Samples. F. H. Billings and C. C. Young, Lawrence, Kan.

American Journal of Tropical Diseases and Preventive Medicine, New Orleans

May, I, No. 11, pp. 751-814

23 *Influence of Experimental Trypanosomiasis on Body Temperature* of White Rats. L. W. Graham and R. H. Hutchison, Philadelphia.
24 *Relationship of Anaphylaxis to Immunity. F. B. Gurd, Montreal.
25 Occurrence of Trichonocardiases in New Orleans. F. M. Johns, New Orleans.
26 Epidemic Climatic Bubo. N. Barlow, Cuyamel, Honduras.
27 Impetigo Tropica. N. Barlow, Cuyamel, Honduras.

24. **Relationship of Anaphylaxis to Immunity.**—For the last two years Gurd, in association with Dr. J. C. Meakins, has carried out experiments in the hope of proving by direct methods the presence in the serum of so-called immune animals, of a substance capable of protecting the sensitized animal against the manifestations of anaphylaxis. He found that the blood-serum of immune animals contains not only sensitizing bodies, but also some substance which is potent to protect the animal from the effects of the cleavage toxic split products. For purposes of explanation Gurd calls the anaphylactic ferment the lysin of the first order. This is the cause of the anaphylactic state. The ferment capable of digesting the toxic split product he has designated the lysin of the second order. It is to the presence in the tissues of lysins of the second order that the repeatedly inoculated animal owes its so-called immunity to the toxin.

With reference to the second order of lysin, Gurd found that with whole proteins used as injection material the lysins of the first order are always produced first. The lysins of the first order are elaborated to a much more marked extent than are those of the second order; all immune animals are therefore potentially sensitized. This is shown by allergic reactions and passive anaphylaxis as well as by direct experiments, such as those reported in this paper. The persistence of the lysins of the second order in the tissues is much shorter than that of the first order. "Immune" animals, therefore, become ultimately markedly sensitive.

Boston Medical and Surgical Journal

May 28, CLXX, No. 22, pp. 821-860

28 Diagnosis and Treatment of Disease of Stomach. F. W. White, Boston.
29 Significance of Minimal Macroscopic Gastric Stasis. A. E. Austin, Boston.
30 Banti's Disease with Report of Successful Splenectomy. M. G. Sturgis, Seattle, Wash.
31 Operation for Correcting Aquiline Nasal Deformity. O. A. Lothrop, Boston.
32 *Anaphylactic Reactions Occurring in Horse Asthma after Administration of Diphtheria Antitoxin. J. L. Goodale, Boston.

32. **Anaphylactic Reactions Occurring in Horse Asthma.**—In three cases of horse asthma, reported by Goodale, the application of horse-serum to the nasal mucous membrane, or to a cut of the skin gave rise to an immediate reproduction in miniature of the phenomena of anaphylactic shock, namely spasm of the arterioles, with edema and surrounding congestion.

One case of horse fever gave a delayed but otherwise typical skin reaction, but no disturbance in the nose. One case of horse fever gave a delayed reaction to the nasal test, but was negative for the skin test. Four of the horse-

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found by Thalhimer and Rothschild in three cases of chorea without joint manifestations, proving the close relation of this condition to rheumatism. They were absent in fourteen cases of subacute bacterial endocarditis due to *Streptococcus mitis.* They were not found in infections of the endocardium with the gonococcus, staphylococcus, streptococcus or pneumococcus. Even in the absence of a rheumatic history the authors agree with Fraenkel, that the presence of Aschoff bodies signifies a previous rheumatic infection. Aschoff bodies are not always found in rheumatic carditis, where the infection antedates death by a long period, but the healed remains, represented by sclerotic patches (*"Schwielsen"*), are present. Thalhimer and Rothschild suggest that the cases of arthritis characterized by the presence of the submiliary nodules of Aschoff in the myocardium be placed in one group and called for the time being "rheumatism"; and the cases with articular manifestations, yielding positive bacteriologic findings and no Aschoff bodies, should be classified according to the infecting microorganisms concerned, and not as rheumatism.

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Goodale is convinced that in horse asthma, an anaphylactic reaction may occur after the administration of horse-serum; in horse fever with nasal symptoms alone, this danger is less or not at all to be feared, and in other types of asthma and of vasomotor rhinitis it is not present.

Colorado Medicine, Denver

May, XI, No. 5, pp. 179-212

33 Suspension Laryngoscopy. L. B. Lockard, Denver.
34 Bacteriology of Acute Rheumatism. R. C. Baker, Denver.
35 Eye Lesions Resulting from Auto-Intoxication. H. M. Thompson, Pueblo.

Journal of Biological Chemistry, Baltimore

May, XVII, No. 4, pp. 413-543

36 Behavior of Emulsin in Presence of Collodion. R. E. Clausen, Berkeley, Cal.
37 Action of Leukocytes and Kidney Tissue on Pyruvic Acid. P. A. Levene and G. M. Meyer, New York.
38 Fate of Alanine in Glycosuric Organism. H. D. Dakin and H. W. Dudley, New York.
39 *Formation of Glycocoll in the Body. III. A. A. Epstein and S. Bookman, New York.
40 Preparation of Creatin, Creatinin and Standard Creatinin Solutions. O. Folin, Boston.
41 Determination of Creatinin and Creatin in Urine. O. Folin, Boston.
42 Determination of Creatinin and Creatin in Blood, Milk and Tissues. O. Folin, Boston.
43 Creatin Content of Muscle. O. Folin and T. E. Buckman, Boston.
44 Creatinin and Creatin Content of Blood. O. Folin and W. Denis, Boston.
45 Protein Metabolism from Standpoint of Blood and Tissue Analysis. VII. Interpretation of Creatin and Creatinin in Relation to Animal Metabolism. O. Folin and W. Denis, Boston.
46 *Synthesis of Hippuric Acid in Animal Organism. I. In Rabbits on Glycocoll Free Diet. H. B. Lewis, Philadelphia.
47 Constitution of Kynurenic Acid. A. Homer, Toronto.
48 *"Emotional Glycosuria" in Man. O. Folin, W. Denis and W. G. Smillie, Boston.
49 *Theory of Diabetes. III. Glycollic Aldehyd in Phlorizinized Dogs. W. D. Sansum and R. T. Woodyatt, Chicago.
50 Velocity of Hippuric Acid Formation and Elimination from Animal Body. A. M. Raiziss, G. W. Raiziss and A. I. Ringer, Philadelphia.
51 Reduction of Ammonium Molybdate in Acid Solution. C. W. Miller and A. E. Taylor, Philadelphia.

39. **Formation of Glycocoll.**—The data obtained in experiments by Epstein and Bookman show that alanin, free or combined with a benzoyl radical, fails to yield glycocoll. This result is in accord with work of Magnus-Levy. From the structural character of alanin it is not conceivable that it can be directly converted into glycocoll. The authors' results serve to show, however, that in its decomposition in the body, alanin does not yield cleavage products which can be synthesized into glycocoll. Furthermore, alanin has no direct or indirect effect on hippuric acid metabolism. The increased output of hippuric acid, and hence glycocoll, observed after the administration of benzoyl-leucin the authors suggest is probably not a function of the benzoyl radical of the compound.

46. **Synthesis of Hippuric Acid in Organism.**—In rabbits fed on a glycocoll free diet of milk, Lewis found that the ingestion of sodium benzoate causes no marked rise in the elimination of total nitrogen. The nitrogen eliminated as hippuric acid appears to be derived at the expense of the nitrogen normally present in the urine as urea, since the urea elimination decreases with increased hippuric-acid elimination. The synthesis of glycocoll for the purposes of detoxication of the benzoate results from a deviation of the normal path of catabolism and not from a specialized metabolism. These results are in agreement with those obtained by McCollum and Hoagland in their studies on pigs reduced to their endogenous protein metabolism.

48. **Emotional Glycosuria.**—In order to obtain additional data on the subject of glycosuria in the insane, the authors examined the urine of 192 patients at the McLean Hospital for the Insane. In 22 of these they found unmistakably positive sugar reactions with Nylander's, Benedict's and the phenylhydrazin tests. The great majority, but not all of those who had sugar in the urine, suffered from depression, apprehension or excitement. Some of them had been in apparently the same condition with reference to the emotional state for several years. Of 664 consecutive urine examinations made at the Danvers State Hospital for the Insane, the number giving a positive test for sugar was 58. Of 34 second-year medical students examined before and after an examination one had sugar both before and after the examination. Of the remaining 33, 6, or 18 per cent., had small but unmistakable traces of sugar in the urine passed immediately after the examination.

A similar study was made on second-year women students. Since these students were younger and presumably much more excitable than the medical students it was thought that even more striking results might be obtained. This expectation did not prove well founded. Out of 36 taking the examination and who had no sugar in the urine on the day before, 6 of the 17 per cent. eliminated sugar with the urine passed immediately after the examination. It seems reasonably certain from the results obtained that pronounced mental and emotional strain may produce temporary glycosuria in man.

49. **Glycollic Aldehyd in Phlorizinized Dogs.**—Glycollic aldehyd has been prepared from the crystallin dihydroxyfumaric anhydrid of Fenton and Jackson. Given to fully phlorizinized dogs in single doses of about 5 per cent. strength subcutaneously it has apparently caused an increased breakdown of protein as evidenced by a rise in the urinary nitrogen and a corresponding increase of the sugar while G : N remained constant. The initial rise has been followed in later periods by a fall in all the urinary components examined. When given very slowly in dilute 1 per cent. solution there has been observed an absolute rise in the glucose excretion out of proportion to the rise in the nitrogen, hence an increased G : N ratio not due merely to a lessened nitrogen output but suggestive of a new formation of glucose out of glycollic aldehyd itself. Some 45 to 75 per cent. of the glycollic aldehyd given appears to have escaped oxidation and become converted into glucose in these latter experiments. Judgment is reserved as to whether the small increases of reducing substances seen in these experiments are due to a conversion of glycollic aldehyd into d-glucose or to some other process.

Journal of Cutaneous Diseases, New York

June, XXXII, No. 6, pp. 413-480

52 Why We Deferred General Treatment of Syphilis Until Appearance of Secondary Symptoms. H. G. Klotz, New York.
53 Kromayer Light in Treatment of Certain Diseases of Skin. A. S. Clark, New York.
54 Mycosis Fungoides Occurring in Negress. B. Wolff, Atlanta, Ga.
55 Dermatitis Herpetiformis with Transitory Pemphigoid Eruption. H. K. Gaskill, Philadelphia.

Journal of Experimental Medicine, Lancaster, Pa.

May, XIX, No. 5, pp. 417-522

56 *Significance of Submiliary Myocardial Nodules of Aschoff in Rheumatic Fever. W. Thalhimer and M. A. Rothschild, New York.
57 *Experimental Focalized Myocardial Lesions Produced with Streptococcus Mitis. W. Thalhimer and M. A. Rothschild, New York.
58 *Experimental Arthritis in Rabbit, Produced with Streptococcus Mitis. M. A. Rothschild and W. Thalhimer, New York.
59 *Stage in Migration of Adult Tertian Malarial Parasite. M. Rowley-Lawson, New London.
60 *Nature of Serum Antitrypsin. J. W. Jobling and W. Petersen, New York.
61 *Serotoxin. J. W. Jobling and W. Petersen, New York.
62 Growth of Bacteria on Media Containing Various Anilin Dyes, with Special Reference to an Enrichment Method for Typhoid and Paratyphoid Bacilli. C. Krumwiede, Jr., and J. S. Pratt, New York.
63 *Factors of Resistance to Heteroplastic Tissue Grafting. J. B. Murphy, New York.

56. **Nodules of Aschoff in Rheumatic Fever.**—In rheumatic myocarditis, foci, termed submiliary nodules of Aschoff, are present which are characteristic of the rheumatic infection. They are most frequently found in the walls of the left ventricle, the auricles usually escaping. The nodules were

found by Thalhimer and Rothschild in three cases of chorea without joint manifestations, proving the close relation of this condition to rheumatism. They were absent in fourteen cases of subacute bacterial endocarditis due to *Streptococcus mitis.* They were not found in infections of the endocardium with the gonococcus, staphylococcus, streptococcus or pneumococcus. Even in the absence of a rheumatic history the authors agree with Fraenkel, that the presence of Aschoff bodies signifies a previous rheumatic infection. Aschoff bodies are not always found in rheumatic carditis, where the infection antedates death by a long period, but the healed remains, represented by sclerotic patches (*"Schwielsen"*), are present. Thalhimer and Rothschild suggest that the cases of arthritis characterized by the presence of the submiliary nodules of Aschoff in the myocardium be placed in one group and called for the time being "rheumatism"; and the cases with articular manifestations, yielding positive bacteriologic findings and no Aschoff bodies, should be classified according to the infecting microorganisms concerned, and not as rheumatism.

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New Jersey State Medical Society Journal, Orange

May, XI, No. 5, pp. 217-270

82 Ether Anesthesia by Open Method. F. R. Widdowson, Philadelphia.
83 Some Phases of Appendicitis. G. Williams, Atlantic City.
84 Physiologic and Psychologic Functions of Artificial Light. F. L. Godinez, Jersey City.
85 Utility of Hodgen Splint in Fracture of Thigh. J. A. MacLay, Paterson.

New Mexico Medical Journal, Las Cruces

May, XII, No. 2, pp. 35-62

86 Contagion Among Canon Cito Navajo Indians. C. L. Day, Albuquerque.
87 Treatment of Pyosalpinx. W. R. Lovelace, Albuquerque.
88 Surgery under Difficulties. J. G. Holmes, Alamogordo.
89 Bacillus Bulgaricus in Diphtheria. G. Werley, El Paso, Tex.

New York Medical Journal

May 23, XCIX, No. 21, pp. 1013-1060

91 Treatment of Insane in Tropics. (To be continued.) F. Woodbury, Philadelphia.
92 *Inlay Bone Graft in Fresh Fractures. F. H. Albee, New York.
93 Relief of States of High Vascular, Muscular and Mental Tension. W. J. M. A. Maloney and V. E. Sorapure, New York.
94 Surgery of the Hour-Glass Bladder. J. B. Squier, New York.
95 Vagitus Uterinus. Case-Report. G. L. Brodhead, New York.
96 Preventive and Curative Treatment of Ophthalmia Neonatorum. A. Brav, Philadelphia.
97 Albumin Reaction in Sputum. W. M. Lewis, Baltimore.
98 Hyperthyroidism. E. Birdsall, Glens Falls.
99 Surgical Relationships of Mouth Infections. T. B. Hartzell, Minneapolis.
100 Intestinal Parasites (Strongyloides Intestinalis), with Unusual Symptoms. M. I. Moss, Philadelphia.
101 Autoserotherapy in Fibrinoserous Pleurisy. H. M. Fisher, Philadelphia.
102 New Psychosis. S. Block, New York.

92. **Inlay Bone Graft in Fresh Fractures.**—The graft used by Albee is removed from the fractured bone, instead of from the crest of the tibia, by making the segment removed from one fragment double the length of that removed from the other, if possible 5½ inches for the long fragment and 2½ inches for the length of the short fragment.

After stripping up the periosteum overlying the area from which the short segment is to be removed—and this stripping should be done with a sharp instrument to insure the removal of the underlying osteogenetic cells—the gutter is started by the twin saws adjusted at a suitable distance apart, depending on the size of the graft and gutter to be formed. The long segment to be removed from the other fragment is outlined with the twin saws, adjusted at the same distance as when outlining the short segment, but the periosteum is removed from only the distal half of the long segment. These parallel saw cuts are now continued through the bone to the medullary cavity, with the single saw held at such an angle as to cause the cuts to converge in approaching the medullary cavity, in order to prevent the graft, when forced tightly into position, from dropping into the medullary cavity beneath. To free the ends of the grafts transverse cuts are made, either with a smaller motor saw or with a chisel.

The breadth of the saw-blade cuts is sufficient to allow the graft, when turned about and placed in position, to sink slightly below the borders of the gutter, thus furnishing a margin along the sides of the long graft into which dowel holes are drilled obliquely outward to receive the autogenous dowel pegs made by splitting the removed short segment into fragments and running them through the doweling instrument. When these pegs are driven into place, the graft is held securely, and proper alignment of the fragments is insured by the leverage action of the accurately fitting graft to its gutter bed. The periosteum is then drawn over the denuded portion of the graft and held by a few catgut sutures; also the periosteum left at the site of the short fragment is drawn across the gap and sutured with catgut.

Surgery, Gynecology and Obstetrics, Chicago

May, XVIII, No. 5, pp. 529-660

103 *Difference between Older and Newer Treatment by Roentgen Ray and Radium in Gynecologic Diseases. B. Kronig, Freiburg.
104 Treatment of Blood-Vessel Injuries. W. W. Grant, Denver.
105 *Surgical Repair of Blood-Vessels: Its Technic, Its Uses and Limitations. J. S. Horsley, Richmond, Va.
106 Cancer of Breast in Boy Fifteen Years Old. R. C. Bryan, Richmond, Va.
107 *Eventration of Diaphragm. I. F. Stein, Chicago.
108 Complications Following Surgical Operations. E. H. Beckman, Rochester, Minn.
109 Hysteromyomectomy, Its Evolution and Perfection. L. S. McMurtry, Louisville, Ky.
110 Efficiency Engineering in Pelvic Surgery: One- and Two-Suture Operations. R. L. Dickinson, Brooklyn.
111 *Experimental Work in Bone Transplantation. E. J. Lewis, Chicago.
112 Transplantation of Bone in Pott's Disease. E. W. Ryerson, Chicago.
113 Bone Transplant. H. B. Thomas, Chicago.
114 Supernumerary Ureter Opening Extravesically. H. D. Furniss, New York.
115 Influence of Ectopic Pregnancy on Uterus, with Special Reference to Changes in Its Blood-Supply and Uterine Bleeding. J. A. Sampson, Albany, N. Y.
116 *Education and Publicity Through Council on Health and Public Instruction of American Medical Association. F. R. Green, Chicago.
117 *Congenital Pyloric Stenosis. R. Hill, St. Louis.
118 Operative Treatment for Malformations of Uterus and Vagina. J. M. M. Kerr, Glasgow, Scotland.
119 *Method of Exposing Pelvic Portion of Ureter. J. M. Birnie, Springfield, Mass.
120 Technic Employed in Excision of Carcinomatous Urethra. S. Stark, Cincinnati.
121 *Simple Heat Method of Sterilizing and Storing Catgut. W. Bartlett, St. Louis.
122 *New Operative Procedure for Treatment of Suppurative Salpingitis in Young Women. W. B. Bell, Liverpool.
123 Treatment of Fractures by Fixation with Animal Bone Plates and Bone Screws. E. J. Brougham and A. C. Ecke, Chicago.
124 Treatment of Case of Birth Fracture of Shaft of Femur. V. P. Blair, St. Louis.
125 Personal Experiences with Coagulene-Kocher-Fonio. G. de Tarnowsky, Chicago.
126 Some Recent Tests for Gastric Carcinoma. R. M. Carter, Green Bay, Wis.

103. Abstracted in The Journal, Dec. 6, 1913, p. 2098.

105. Abstracted in The Journal, Jan. 17, p. 233.

107. **Eventration of Diaphragm.**—In Stein's case examination revealed a typical eventration of the diaphragm with the stomach, the greater part of the small and large intestine, the spleen, the left lobe of the liver, the tail of the pancreas, and the upper pole of the left kidney in the chest. The heart was found greatly enlarged and pushed extremely to the right. The lungs were found above and to the right of the diaphragm, all compressed except the lower lobe of the right lung. The diaphragm on the left side was found to be a fibrous dome, thin and gray in appearance, extending to the level of the second interspace, in which no muscle fibers were seen. The remaining abnormality was that of undescended testes, which were found in the abdomen.

111. **Experimental Work in Bone Transplantation.**—The following conclusions based on experiments are submitted by Lewis: 1. That cortical bone, free of its periosteum, endosteum, and marrow will retain its vitality and proliferative powers when subdivided into small fragments and replaced in the tissues. Also that contact with living bone is unnecessary for the growth of these transplants. 2. That larger pieces of bone may be transplanted and remain alive—not being merely grown into by the bone in which they come in contact. 3. That bones may unite after fracture or a space fill in after resection without the aid of any periosteal or bony bridge, and that transplanted fascia may be made to take up the nutritional and limiting functions of the periosteum.

Lewis reports an observation of a case in which a portion of bony shaft 3 centimeters in length was removed and the adjacent periosteum of the ends of the shaft thoroughly scraped away. The interval between the ends was then surrounded by a transplant of fascia which was made to extend up and down along the shaft for some distance. At the post mortem nine weeks later complete bony filling in of the space with excessive callus formation had occurred. The fascia transplant had fused above and below with the periosteum and could not be differentiated from it. In another experiment the same method was followed except that no fascia transplant was used, the space between the periosteum and could not be differentiated from it. In this case no periosteal or bony bridge was allowed to remain, in spite of which fact, at post mortem nine weeks later, a good bony filling in of the space was found to have occurred.

116. Abstracted in THE JOURNAL, Dec. 6, 1913, p. 2099.

117. Abstracted in THE JOURNAL, Jan. 31, p. 405.

119. **Exposing Pelvic Portion of Ureter.**—With the patient in the Trendelenburg position Birnie makes a median incision beginning close to the pubic bone and extending upward, exposing the space of Retzius in the usual manner. No muscle fibers are cut but the recti are retracted to either side. The point where the parietal peritoneum is reflected onto the bladder is noted and care taken not to open the peritoneal cavity. Starting at the bladder, the peritoneum is wiped away toward the median line separating it from the bladder and pelvic wall, thus exposing the ureter. With retraction one gets a complete exposure of the ureter and any necessary procedures may be carried out under the guidance of the eye. Drainage, if necessary may be instituted through the original incision or through a separate stab wound.

121. **Method of Sterilizing and Storing Catgut.**—The process is divided by Bartlett into three definite steps: drying, sterilization and storage. The ordinary commercial 10-foot catgut strand is divided into four equal lengths, each of which is made into a coil about the diameter of a silver quarter. By twisting the last free end three or four times around the components of this little coil the latter is enabled to maintain its shape. These coils are then strung like beads on a thread so that any desired number can be conveniently handled by simply grasping the thread. The string of catgut coils is dried in a bacteriologist's dry sterilizer for four successive hours at a temperature of 80 F., 90 F., 100 F. and 110 F. centigrade. Let thin gauze be interposed between catgut and metal. This should not be attempted on a damp day or in a room which steam enters. The catgut is immediately placed in liquid albolene (petrolatum liquidum) where it is allowed to remain until "clear" in the sense that the term is used in the preparation of histologic specimens. This is usually accomplished in a few hours, though it has been Bartlett's custom to allow the gut to remain in the oil over night. Thin paper must line the receptacle so that the catgut may not touch its walls.

The vessel containing the oil is placed on a pan of sand and the temperature raised by a gas-flame during one hour to 160 F. centigrade, which temperature is maintained for a second hour. By seizing the thread with a sterile forceps the gut is lifted out of the oil,. an excess of which is allowed to drip off, the thread is cut and the coils dropped into a solution of iodin crystals in Columbian spirits (deodorized methyl alcohol), the proportion of iodin varying according to the diameter of the catgut. For No. 00 it should be 1 to 700; for No. 0, 1 to 600; for No. 1, 1 to 500; for No. 2, 1 to 400; for No. 3, 1 to 300; for No. 4, 1 to 200; the iodin being taken by weight and the alcohol by volume. The material becomes ready for use in a few hours, and should remain in the solution indefinitely without deterioration. A few coils may be removed at any time with no risk of contaminating those left behind.

122. **Operative Procedure for Suppurative Salpingitis.**—Bell's method aims at removing diseased structures as widely as possible, while one ovary, or a portion of it, is preserved, together with sufficient endometrium to ensure the subsequent occurrence of regular menstruation. In other words, both tubes, one ovary and a wedge-shaped portion of the fundus uteri are removed.

West Virginia Medical Journal, Wheeling

May, VIII, No. 11, pp. 361-394

127 Syphilis. M. Mendeloff, Charleston.
128 Salvarsan. W. S. Robertson, Charleston.
*129 Life-Insurance Examinations. J. T. Thornton, Wheeling.
130 Morphin and Alcohol Affect Brain Cells. J. W. Williams, Richmond.
131 Common Errors in Neurologic Diagnosis and Treatment. T. A. Williams, Washington, D. C.
132 County Medical Society. G. W. Swimley, Bunker Hill.
133 Bowel Movements after Abdominal Section. I. Hardy. Morgantown.
134 Medical Temperance. E. M. Chalfant, Shinnston.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

May, XI, No. 125, pp. 193-240

1 Group of Cases of Chronic Recurrent Diarrhea in Childhood. F. J. Poynton, R. R. Armstrong and D. N. Nabarro.
2 Food Value Required by Growing Girls, Aged Four to Fifteen. Result of Investigations Carried on for Seventeen Years, with Analysis and Comments. (To be continued.) J. G. Sharp.
3 Congenital Familial Cholemia without Splenomegaly. G. R. Ward.

British Medical Journal, London

May 16, I, No. 2785, pp. 1053-1104

4 *Phenomena Attributable to Spasm of Cerebral Vessels (Angiospasm). W. Russell.
5 Oxygen Want and Means of Its Relief. A. G. Auld.
6 *Relation Between Epilepsy and Tuberculosis. B. H. Shaw.
7 *Strychnin-Tuberculin Treatment of Hospital Tuberculous Cases. J. H. Whelan.
8 *Cutaneous Tuberculin Reaction of Von Pirquet. A. J. B. Leckie.

4. **Phenomena Attributable to Cerebral Angiospasm.**—The special condition discussed by Russell is spasm constriction of the arterial channels in localized areas of the brain; the term "cerebral angiospasm" is given to the condition. Although the cerebral vessels cannot be seen, the vessels of the retina can be examined by means of the ophthalmoscope, and it has been clearly established that angiospasm occurs in these vessels. Various observers have noted that a temporary loss of vision of one-half of the retina may be associated with marked diminution in the size of the retinal vessels corresponding to the blind field, and that vision returns with the relaxation of the constricted vessels and the reestablishment of the normal blood-supply to the part. From these observations alone Russell believes it is fair to postulate that corresponding constriction can take place in the arteries in localized areas of the brain.

6. **Relation between Epilepsy and Tuberculosis.**—An analysis of 100 deaths among epileptics by Shaw taken seriatim shows that tuberculosis was the cause in 33 cases. A similar analysis of 290 deaths among non-epileptic patients gives the figure 24.1. The tuberculosis mortality is therefore nearly 10 per cent. greater among epileptics. He tried the tuberculin test on 60 epileptics; the resultant reactions were negative in 3 cases, doubtful in 7, and positive in 50. The corresponding figure for 10 non-epileptic patients resident in the epileptic ward was 50.0. A very noticeable peculiarity among epileptics is the marked depression of temperature after even a comparatively small initial rise and the quick response to the tuberculin in the first place. In 7 cases the temperature dropped to 96 F. and below (one reaching 95.4 F.), in 4 cases to 96.2 F., and in 6 to 96.4 F. In 15 cases it dropped to between 96.8 F. and 97.2 F. so that in 31 cases, or over 50 per cent., this sudden depression was marked. In all these cases the epileptic seizures were very severe and frequent, and in the 7 cases in which the temperature fell to 96 F. and below exceptionally so.

The frequency of subnormal temperatures among epileptics was also very marked. Out of the 60 cases under consideration this condition was present in 35; physical signs were present in 22, doubtfully so in 6, and apparently absent in 7 cases. Of all those showing a positive reaction to tuberculin, physical signs were present in 61.6 per cent., and the number of cases in which the right apex was involved as compared with the left is remarkable; out of the total number showing signs of tuberculous deposit (namely, 38), in 33 the right apex was involved. This is a fact of very great interest when it is recollected that it is mainly on the right side that the tracheo-bronchial glands are implicated in children. It is contended by Shaw that epilepsy may be an evidence of tuberculous infection in childhood, probably affecting the bronchial glands, initially, and that the convulsions are due either to reflex irritation so set up or to the resulting toxemia acting on an unstable nervous system, either inherited or acquired. Further, that the constantly recurring seizures not only establish a vicious habit as far as the nervous system is concerned, but also effect tuberculin autoinoculation, thus tending to keep the tuberculous process in check, so that, instead of a fatal termination epilepsy results. Consequently, the advisability of carefully searching for tuberculous foci in children the moment epileptic fits develop, and also the immediate use of tuberculin in their treatment, should receive consideration.

7. Strychnin-Tuberculin Treatment of Tuberculosis.—Whelan gives strychnin injections to all kinds of tuberculous patients, including cases in which tuberculin injections are contraindicated, with the best results. He gives strychnin in acute and chronic cases, in the pyrexial and the apyrexial, in the early stages and in the most advanced, and with invariably good results. It always improves the appetite and general condition. Patients who have a loathing for food soon regain their appetites under its influence. Strychnin, Whelan states, will frequently do away with the painful necessity of adopting gastric lavage and over-alimentation. But the drug must be given by intramuscular or subcutaneous injection, preferably the former. Administered by the mouth it has not the same effects and in large doses will cause tormina and diarrhea, with possibly disastrous results in advanced cases. These effects are never produced by the injections. Hemorrhages from the lungs, Whelan says, are found to be no contra-indication for the strychnin injections. He has given them in such cases with remarkably good effects when the circulation had been quieted by morphin. The following is the solution he invariably uses: ℞ Liquor strychnin hydrochlorid (B.P.) 100 minims; sterile normal saline solution made with camphor water, add to make 400 minims; Signa: 1 in 400 strychnin solution. Dose, 18 to 25 minims.

8. Von Pirquet Cutaneous Tuberculin Reaction.—Leckie holds that the cutaneous reaction is of no prognostic or diagnostic value; that results are more frequently obtained in women and children than in men; that the older the individual the less likely is the reaction to be obtained; old-standing lesions, as distinguished from advanced cases, usually fail; cases of rheumatism give more positive results than tuberculous individuals; late and early reactions have no clinical significance..

Journal of Laryngology, Rhinology, and Otology, London

May, XXIX, No. 5, pp. 225-280

9 Intranasal Operations for Frontal Sinus Suppuration. P. Watson-Williams.
10 Intranasal Treatment of Empyema of Frontal Sinus. H. Tilley.
11 International Collective Investigation of Ozena. A. B. Kelly.
12 Reports for Year 1913, from Ear and Throat Department of Royal Infirmary, Edinburgh. J. Hewat.

Lancet, London

May 16, I, No. 4733, pp. 1373-1440

13 *Development of Heart in Man in Relation to Its Functional Activity. D. Waterston.
14 Diagnosis of Appendicitis. W. H. Battle.
15 Common Errors in Treatment and Diagnosis of Dietetic Disorders in Infants. E. Pritchard.
16 *Subtotal Gastrectomy for Cancer of Stomach. C. M. Moullin.
17 Pedunculated Intrabronchial Tumor (Sarcoma), Causing Bronchiectasis. J. A. B. Hicks.
18 Cases of Exophthalmic Goiter Treated by Operation. A. J. Walton.
19 *Malignant Tumors of Bones: New Method of Conservative Operative Treatment. R. Wenglowski.
20 Influence of Roentgen Rays on Some Cases of Persistent Suppuration. E. P. Cumberbatch.

13. Development of Heart in Man.—In the first stage of its development the heart according to Waterston is a self-regulating organ. Its rhythmic activity is shown by peristaltic waves of contraction which sweep over it from end to end; at this stage it possesses a continuous muscular coat. It is quite independent of the central nervous system. In the next stage—i.e., when the primitive chambers are being divided—a new mechanism arises in the form of a node of specialized tissue situated at the junction of sinus venosus and atrium, which passes thence to the dorsal wall of the atrium and the region of the pulmonary veins. This is the first of the nodal tissues to appear, and is the precursor of the sinu-atrial node of the adult heart. The a-v bundle and node make their appearance about the time of the further division of the chambers of the heart, as a bundle of fibers lying under the posterior endocardial cushion of the atrial canal, and extending from the atrial wall to the ventricular muscular septum. The evidence goes to show that this bundle is derived from the tissues in which it appears, and that from the first it is surrounded by a sheath of loose connective tissue. Fibers and cells from the central nervous system invade this bundle, and also go to other portions of the heart wall, but the intrinsic regulating mechanism appears to arise independently of the nervous system, and is connected only secondarily through that system with other parts of the body.

16. Subtotal Gastrectomy for Cancer.—Five years ago Moullin did a subtotal gastrectomy on a woman, 51 years of age and rather stout, for gastric cancer. A guarded prognosis was given, chiefly because of the persistence and severity of the pain. An incision was made across the stomach, running from the right side of the esophagus downward and slightly to the left, so as to remove the whole of the stomach except a small portion at the cardiac end. The upper portion of this incision was closed with a double row of sutures; the lower end was sutured to the edges of an incision of corresponding length in the jejunum, so as to form a gastro-jejunostomy. The patient was sick once forty-eight hours after the operation, bringing up some bile, but in other respects recovery was quite uneventful. In the portion of stomach removed there was a characteristic carcinomatous growth originating on the margin of an old chronic ulcer. The patient is alive and well today with no evidence of recurrence.

19. Malignant Tumor of Bones.—In malignant tumors which affect bone, to avoid the resection of the affected portion of bone Wenglowski sterilizes the bone to kill all the elements of the tumor, and then to allow the dead bone to remain in its natural connection with the healthy part of the bone. The sterilization is performed by means of steam under high pressure. For this purpose an ordinary autoclave is used, or even a steam kettle may be employed; in it steam is formed under a pressure of from 3 to 5 atmospheres. On the spout of the kettle Wenglowski puts a thick walled rubber tube from 1½ to 2 meters long, and on the other end of this tube he fastens a piece of metal tubing. This metal piece has many holes for the escape of the steam. For the sterilization of the front side of the bone, he uses a straight metal tube with terminal holes; for the under surface of the bone he uses a larger flattened tube which is slightly curved, and the concave side has the holes for the escape of the steam. After the removal of the tumor in the soft parts he scrapes off the rest of the tumor on the bone and lays bare the bone as for a resection. To protect the soft parts from burning he covers them with three or four thicknesses of gauze; on this he puts a thin sterilized layer of asbestos, and finally a metal plate. This metal plate is used to guard the soft parts from the hot condensation water which might trickle through the gauze and the asbestos. Then the curved metal tube is passed under the bone and the steam is turned on.

To heat the tibia to from 75 to 80 C. it is necessary to apply the steam for three minutes, for the lower jaw-bone one and one-half minutes, and for the condyles of the femur eight minutes. At 2 cm. distant the temperature is only 45 to 50 C., and at 3 cm. distant from 35 to 40 C., so that the effect of the steam only extends to about 2 cm. from the tumor. If the greater part of the bone is to be sterilized the sterilization must be effected bit by bit, the metal tube being pushed along the bone. It is not necessary to sterilize the front surface of the bone by itself, for it is included in the sphere of activity of the steam which has sterilized the medullary cavity.

Quarterly Journal of Medicine, London

April, VII, No. 27, pp. 209-323

21 *Paroxysmal Tachycardia. H. G. Butterfield and G. H. Hunt.
22 Cholesterin: An Account of Its Relations to Pathology and Physiology. J. W. McNee.
23 *Bilateral Salivary Swellings (Mikulicz' Disease). H. Thursfield.
24 *Prognosis of Acute Articular Rheumatism, Special Reference to Cardiac Manifestations. C. G. Kemp.
25 Anaphylaxis and Its Bearing on Medicine. J. McIntosh.
26 Bacterial Endocarditis. I. Simons.

21. **Paroxysmal Tachycardia.**—Four cases of paroxysmal tachycardia are described by Butterfield and Hunt in three of which the heart was examined histologically. In the first case the focus from which the ectopic beats arose was diagnosed as being situated in the ventricles. Post-mortem, the interventricular septum was the site of the most extensive disease. In the second and third cases the tachycardia was supraventricular in origin, in one case being auricular, in the other, either auricular or nodal. In both these cases the most marked lesions were found in the neighborhood of the sino-auricular node. The histologic examination thus confirms the diagnosis made from the electrocardiograms. The fourth case was one of auricular origin; in the intervals between the attacks the patient enjoyed fairly good health.

23. **Bilateral Salivary Swellings (Mikulicz' Disease).**—Clinically, Thursfield says, it is possible to recognize at least eight groups of cases in which bilateral swellings of the salivary glands, either with or without an accompanying enlargement of the lymphatic glands, form the most characteristic symptoms: 1. A congenital, hereditary, or family affection. 2. Mikulicz' disease proper. 3. Mikulicz' disease with involvement of the lymphatic apparatus. 4. Leukemia. 5. Tuberculosis. 6. Syphilis. 7. Gout. 8. Sialodchitis fibrinosa; intermittent or periodic salivary swelling. In addition there are from time to time met with cases which do not appear to belong to any of these groups. The treatment which appears to promise the best results is to remove carefully any possible source of chronic infection, e. g., decayed teeth; to seek to establish the general health; to give arsenic in the largest doses which can be tolerated, and to treat the actual swelling with Roentgen-ray applications.

24. **Prognosis of Acute Articular Rheumatism.**—Kemp claims that 23 per cent. of patients go through one or more attacks of acute rheumatism without any clinical affection of the heart, irrespective of the age when first attacked; 22 per cent. develop signs of carditis in the acute stage, these signs disappearing during convalescence; 18 to 20 per cent. of the cases which develop signs of endocarditis, not clearing up before patient leaves hospital, have no permanent valvular lesion, the murmurs being due to myocarditis, or incompetence from temporary hyperemia of the valves, associated with dilatation. If a synovial membrane can recover, why should not a heart valve, asks Kemp. In 14.5 per cent. of cases with acute rheumatic endocarditis of severe type, the murmurs undergo a change, resulting in the disappearance of one or more of the murmurs, such murmurs being due to associated dilatation. As a rule, the murmurs due to myocarditis are softer in character than those due to valvular disease.

Cases in which the heart is going to recover completely show signs of such recovery within twelve months of the acute attack, though the process may not be completed till some years later. Graupner's test for the estimation of the cardiac efficiency has not been proved to be of any value in enabling one to recognize the presence or degree of cardiac weakening, not appreciable by the methods already in general use. The amount of physical work which each individual can do in earning his or her living is a far more reliable and efficient test of the heart's working capacity.

Archives des Maladies du Cœur, etc., Paris

May, VII, No. 5, pp. 289-366

27 *Endocarditis of the Anemia Type. C. Achard and C. Foix.
28 *Heart-Block from Inherited Syphilis. A. Nanta.
29 *Transient Heart-Block in Acute Infectious Disease. (Bradycardie par block partiel. Dissociation auriculo-ventriculaire transitoire. Troubles du rythme cardiaque chez des malades atteints de rhumatisme articulaire aigu.) L. Gallavardin, Pallasse, D. Routier, C. Esmein, C. Pezzi and E. Donzelot.
30 Changes in Electric Phenomena of the Ventricle in Heart-Block. L. Gallavardin.

27. **Anemia with Endocarditis.**—Achard and Foix compare two cases from their own experience with several similar ones on record, all having in common anemia of or approximating the pernicious type in connection with malignant endocarditis. A streptococcus was responsible for the trouble in one of their cases. An intense anemia in the course of a subcontinuous febrile state, remittent or intermittent, sometimes with long intervals, should suggest the possibility of malignant endocarditis. Their patients were a man and woman of 28 and 26, with extreme anemia, debility, edema and gastro-intestinal derangement, but there were no erythematous spots such as Osler described as the "finger sign." The fever was moderate but highly irregular, with intervals of normal temperature, but the pulse kept at about 120 all the time, even during the intervals. A double aortic murmur of long standing was not modified by the endocarditis in one case; in the other a mitral murmur developed just before death. Otherwise the heart gave little sign of its diseased condition. The clinical picture was dominated throughout by the severe anemia.

28. **Heart Block from Inherited Syphilis.**—The possibility of an inherited taint was not suspected in Nanta's case until the woman was over 20, although she had developed anemia at 7, a suppurating joint affection at 9, and Adams-Stokes syndrome at 11, and at 20 and 22 she gave birth to children dead or dying soon after. Her pregnancies were followed by multiple scattered gummas, some of which suppurated and burrowed deep, confining the woman to bed for three years, rebellious to all forms of treatment until a vigorous course of neosalvarsan and mercury put her on her feet again. Although the jugular pulse was 87 and the apex beat only 29, the patient had always led an active life until the last four years.

29. **Transient Heart Block in Acute Infections.**—In Routier's cases the complete heart-block developed in the course of acute articular rheumatism or pneumonia. In the first case amyl nitrite gave no relief but the heart-block subsided under atropin, and in the second case spontaneously.

Bulletin de l'Académie de Médecine, Paris

April 28, LXXVIII, No. 17, pp. 609-636

31 Tuberculous Peritonitis Under Age of 6. A. B. Marfan.
32 Ascitic Puriform Pleural Effusions. Dopter.
33 Tolerance to Transfusion of Blood. (Recherches sur les réactions humorales à considérer à propos de la transfusion du sang.) A. Wallich and C. Levaditi.

Presse Médicale, Paris

April 11, XXII, No. 29, pp. 273-284

34 Thrombosis of the Central Vein of the Retina. F. de Lapersonne.
35 *Indications and Contra-Indication for Digitalis Deduced from the Heart Rhythm. A. Martinet.
36 Tuberculosis plus Cancer on Back of Hand. N. Lapeyre.

May 9, No. 37, pp. 349-360

37 Treatment of Chronic Mastoid Disease. (Evidement pétro-mastoïdien.) G. Mahu.

May 13, No. 38, pp. 361-368

38 *Ocular Sympathetic Disturbances. (Le sympathique oculaire.) A. Cantonnet.

35. **Heart Rhythm as Guide for Use of Digitalis.**—Martinet gives a number of diagrams to explain the mechanisms involved in various forms of arhythmia and the effect of digitalis. He summarizes the practical conclusions in the statement that digitalis is formally contra-indicated whenever there is a tendency to heart block, total or partial. It is also generally better to refrain from its use in cases of bradycardia and extrasystoles. It is moderately useful in paroxysmal, emotional or febrile tachycardia, while it may be regarded as almost a specific for tachy-arhythmia from any cause, perpetual, total arhythmia and auricular fibrillation.

38. **The Ocular Sympathetic.**—Cantonnet urges study of the symptoms from irritation or paralysis of the sympathetic innervation of the eye, emphasizing the information liable to be derived therefrom in regard to an affection in the neck, chest, abdomen or spine, of which the oculosympathetic symptoms may be the first warning sign. The paralysis may be preceded by a period of irritation, and may be revealed by exophthalmos or enophthalmos, drooping or retraction of the upper lid, pallor or redness and dryness or moisture of the face. The mydriasis induced by instillation of two drops of a 4 per cent. solution of cocain shows up well any differences between the pupils when they are examined with a dim light eight minutes later. If there

is spasmodic mydriasis from irritation of the sympathetic there will be maximal dilatation after an atropin collyrium and the pupils grow a little smaller under eserin while the reverse occurs with paralytic myosis; atropin causes only slight dilatation and eserin maximum contraction. With paralysis there is also intense mydriasis with the epinephrin test. His personal experience suggests that when the lesion in the sympathetic is in the upper portion, only motor symptoms are observed. When the lesion is below the neck region, vasomotor and secretory disturbances are observed in addition.

Semaine Médicale, Paris

May 6, XXXIV, No. 18, pp. 205-216

39 Amputation of the Breast. (Impotences, douleurs et oedèmes des amputées du sein.) R. de Bovis.

May 13, No. 19, pp. 217-228

40 *Camphor in Pneumonia and Tuberculosis. L. Cheinisse.
41 *Uncontrollable Uterine Hemorrhage in Large Apparently Fibromatous Organ. (Les gros utérus saignants, d'apparence fibromateuse.) F. Lejars.

40. **Camphor in Pneumonia and Pulmonary Tuberculosis.**—Cheinisse reviews a number of articles that have been published in the last year or two on the therapeutic value of camphor. Crouzon advocates adding a little ether to camphorated oil to render it more fluid and thus promote its absorption when injected intravenously; Schule uses ether alone for the vehicle. Subcutaneous injections of camphorated oil have been applied with apparent success in pneumonia by four Russian physicians and by several in Germany. Evidence is accumulating that camphor has a bactericidal action on pneumococci. Hötzel injected subcutaneously twice a day 10 c.c. of camphorated oil in thirty cases of pneumonia and is convinced that it had a specific action. The pneumococcus cannot be cultivated on culture medium containing 1 per ten thousand camphor. Rabbits inoculated with the pneumococcus were saved by a series of subcutaneous injections of camphor without which the controls died. Weihrauch ascribes the antipyretic influence of camphor to its bactericidal action on the mixed infection. When in pneumonia the heart action is good, Svoiekhotov gives the camphor by the mouth every two hours up to the crisis and then at longer and longer intervals for a few days. If the pulse is already up to 120, he begins at once with subcutaneous injections of camphorated oil.

41. **Abnormal Uterine Hemorrhage without Fibroma or Cancer.**—Lejars compares with his own experience the findings recently reported by Briggs and Hendry in 104 uteri after hysterectomy for uncontrollable hemorrhage. They found pedunculated adenomas in fifteen and sessile adenomas in five, and Lejars expatiates on the disturbance liable to be set up by a little tumor of this kind. It acts like a foreign body and tends to induce hypertrophy. In one such case a large median tumor could be felt above the pubis and supravaginal amputation was done as the only measure appropriate for the supposed fibroma. Nothing of the kind was found, however; merely a small polyp implanted in the fundus. The thickened and congested wall had simulated a fibroma on palpation. In a quite recent case a woman of 49 had severe hemorrhages and pain persisting outside of the periods of hemorrhage, with extreme pallor and anemia. The uterus was large as a man's fist but movable, and he removed it as a typical fibromatous organ. The surface proved to be smooth and there were no fibromas except a minute one, very low down. But the uterine wall was abnormally thick and large, measuring almost 5 cm. The mucosa was thickened and edematous. A pedunculated polyp grew near the fundus and a sessile polyp low down. The practical importance of such cases is that examination of the interior will disclose the polyp, and its removal will obviate the necessity for a more serious operation when the woman is still in the child-bearing age. The perfect regularity of the surface of the uterus and its uniform consistency are the only findings which cast a doubt on the assumption of a fibromatous uterus as the explanation of the hemorrhages.

Beiträge zur Klinik der Tuberkulose, Würzburg

XXX, No. 3, pp. 363-490. Last indexed May 23, p. 1696

42 *Inspection and Palpation of the Thorax in Diagnosis of Pulmonary Tuberculosis. S. Galecki.
43 No Benefit from Mesbé Treatment; Eight Cases. (Behandlungserfolge mit Mesbé.) K. Weihrauch.
44 Varying Susceptibility to Different Tuberculins. (Beziehungen der Empfindlichkeit Tuberkulöser auf Partialantigene (Deycke-Much) und auf Alt-Tuberkulin zur prognostischen Form der Lungentuberkulose und zur Prognose (Diagnose) und Therapie von Tuberkulosekrankheit.) H. Kögel.
45 *Analysis of the Reaction to Tuberculin. F. Klemperer.
46 *Human Plus Bovine Tuberculin Tests. H. Nothmann, G. Landmann, C. Siebert and P. Römer.
47 Virulent Tubercle Bacilli in Blood-Stream in Children. P. Lehmann.

42. **Inspection and Palpation of the Chest.**—Galecki tabulates his findings in 300 cases of pulmonary tuberculosis omitting his first 150 cases. He noted a sinking in of the chest wall and of the supra and subclavicula fossae in 43.6 per cent. of the chronic cases in the first stage; in 50.5 in the second and 48.6 in the third stage, confirming the occurrence of this sign with chronic shriveling processes in the lung. The shoulder on the affected side was lower than the other in 190 cases, that is, in 63 per cent. Kuthy's acromion sign was evident in 81 per cent. of all the patients, and in 75 per cent. of the quite recent cases. This sign consists in the lagging behind or total lack of movement in the acromion, the point of the shoulder, as the patient takes a deep breath. Galecki regards this sign as extremely instructive and important, especially when both shoulders present it. He regards it as the most characteristic and striking sign of pathologic interference with the respiratory movements. He found it marked in 69.6 per cent. in the first stage, in 81.9 in the second and 91 in the third, but it gives no hint as to the nature of the process in the lung. He found a difference in the excursions of the ribs on the two sides only in 39 per cent. and mostly in the third stage of the disease. Rigidity of the muscles over the affected area was found in 93 per cent. of the recent cases and not at all with extinct foci. Between these extremes he noted the abnormal local tonus in the muscle in 67 per cent. Local atrophy of muscle was apparent in most of the old chronic cases, corresponding to some degree in extent with the process in the lung. Light touch palpation gave positive findings in 245 of the 346 lung processes with rigid muscles above, but only in 21 of the 132 without local rigidity. Dilated veins were found unreliable as a sign of a pulmonary process.

45. **Research on the Tuberculin Reaction.**—Klemperer found it impossible to render non-tuberculous animals susceptible to tuberculin by preliminary treatment with tuberculin. He concludes from this that the reaction to tuberculin is not a phenomenon of anaphylaxis. He reports further that animals with a local tuberculous process lose their susceptibility to tuberculin for a time after the local process is excised. This seems to demonstrate that the tuberculin reaction is not due to antibodies circulating in the blood. He gives the tracings and tabulated details of his experiments on rabbits and guinea-pigs and some clinical experiences.

46. **Skin Tuberculin Test, Both Human and Bovine.**—Nothmann applied the Pirquet test with both human and bovine tuberculin to 207 children. A negative response was obtained to both in 27 per cent.; 64.2 per cent. reacted positively to both; 0.97 to the bovine alone and 4.3 to the human alone, and 0.5 per cent. to first one and then the other. The significant fact was observed that a reaction to both was obtained at a single trial only in 82.1 per cent. while at the second or third test 91.7 per cent. gave a positive reaction.

Berliner klinische Wochenschrift

May 11, LI, No. 19, pp. 869-916

48 The Toxicology of Corn. (Zum Studium der Maistoxikologie.) B. Gosio.
49 The Mechanism of Internal Ear Functioning. (Art der Labyrinthtätigkeit.) O. Goebel. Concluded in No. 21.
50 Serodiagnosis of Pulmonary Tuberculosis Not Practicable to Date. (Das Abderhalden'sche Dialysierverfahren bei Lungentuberkulose.) M. Wolff and K. Frank.

51 The Physiologic and Therapeutic Action of Pancreas Extracts. F. Müller and S. N. Pinkus.
52 *Collective Inquiry on Goiter. W. V. Simon.
53 *Experimental Rachitis. J. Koch. Commenced in No. 17.

52. **Collective Inquiry on Goiter in Silesia.**—Simon here gives the conclusions drawn from the question-blanks sent to all medical men in Silesia and returned by nearly all, carefully filled out. Twenty-two questions were asked in regard to the prevalence, age incidence, etc., of goiter in each physician's district. A total of 251 cases of goiter were thus listed and a number of goiter nests were discovered. A connection with the drinking water seems more plausible on analysis of the data than the assumption of contact transmission.

53. **Experimental Rachitis.**—Koch injected the *Streptococcus longus* into young animals and an acute infection followed at once, gradually entailing a chronic disease of the bones which apparently was the same as rachitis in man. The dogs allowed to run about freely did not develop the bone trouble or not in the same degree as the dogs kept in stalls. Domestication undoubtedly favors the development of the disease. His experience confirms further the injurious influence of secondary infection after the process of normal ossification had once been upset by the acute infection. The ossification centers are for a long time in a condition of lessened resistance, and an intercurrent whooping-cough, chronic enteritis or the like adds further fuel to the flame. According to his experience, the injurious influence of infections alone—without calling on metabolic derangement—is enough to explain the trouble. Further research will show whether the *Streptococcus longus* alone is capable of this malign influence on the ossification centers or whether other germs may be involved. The pathologic changes in the skeleton after acute infectious diseases in children will repay study, and much may be learned from the veterinarians in this line.

Correspondenz-Blatt für Schweizer Aerzte, Basel

May 2, XLIV, No. 18, pp. 545-576

54 *Induced Pneumothorax. (Grundsätze und Durchführung der Pneumothoraxtherapie in der Behandlung der Lungentuberkulose.) U. Carpi.

May 9, No. 19, pp. 577-608

55 The Dementia with Dementia Precox. O. Hinrichsen.
56 Whooping-Cough Cured by Casual Laparotomy. (Zur Kenntnis der Pertussis.) F. Rusca.

54. **Induced Pneumothorax.**—Carpi was able to make an artificial pneumothorax in 18 of the 25 cases in which he attempted it, and the results were extremely favorable in 13. He gives an illustrated description of the most interesting cases, including one in a girl of 9. Carpi knows of only 12 other cases on record in which pneumothorax was induced in a child. Her fever began to go down almost at once and by the sixth day the temperature was normal and there was soon no further expectoration. At the sixth month she seems clinically cured.

Deutsche medizinische Wochenschrift, Berlin

May 7, XL, No. 19, pp. 937-992

57 Acute Threatening Conditions with Otitis Media. (Behandlung akut bedrohlicher Erscheinungen bei eitriger Mittelohrentzündung.) W. Kümmel.
58 *Pathogenesis and Treatment of Otosclerosis. A. Denker.
59 Importance of Exterminating the Spirochetes Localized in Primary Focus. (Widerstandsfahigkeit lokaler Spirochatenherde gegenüber reiner Salvarsantherapie.) W. Wechselmann and G. Arnheim.
60 Death from Acute Arsenic Poisoning after Injection of 0.8 Gm. Salvarsan in Seven Days in Non-Syphilitic. F. Lube.
61 Influence of Calcium Salts on Production of Transudates and Effusions, Unfavorable Rather than Otherwise. R. Levy.
62 The Uric Acid in the Blood. (Bluthamsäure.) E. Steinitz.
63 Gastric Cancer as Consequence of Industrial Accident. (Magenkrebs, Unfallfolge.) E. Franck.
64 Technic for Implanting New Eyelashes. (Einpflanzung lebender Haare zur Wimpernbildung.) F. F. Krusius.
65 The Factors in Freud's Psycho-Analysis. P. Engelen.
66 The Lymphatic-Exudative Diathesis and Prophylaxis of Tuberculosis. M. Bockhorn.
67 Etiology of Psoriasis. Jaerisch.
68 Pressure on Growing Testicles from Double Varicocele Probable Cause of Tardy Eunuchoid Condition in Case Reported. G. Schwaer.
69 Organic and Mental Development. S. Meyer.

58. **Otosclerosis.**—Denker says that all the mechanical and local operative measures that have been applied to cure otosclerosis have given such poor results that he cannot recommend any of them, particularly as an aggravation of the deafness from their action lies well within the possibilities. Of internal measures, Politzer advises 1 gm. of potassium iodid daily for ten or fifteen days, repeating this four or five times a year. Some have reported benefit from thyroid treatment; others have been less fortunate with it. Denker had found phosphorus useful, alone or combined with bromid. The progress of the deafness was often arrested and the subjective noises subsided. Patients with otosclerosis should be urged to take a course in lip-reading before the hearing is entirely lost. The main point with otosclerosis is prophylaxis. It has a pronounced familial and hereditary tendency, and is liable to increase in severity during periods of special stress and more active bone growth, as at puberty and during a pregnancy. Derangement of the circulation, as with vasomotor neuroses, syphilis and arteriosclerosis, may also contribute. The physician should warn with special emphasis against the intermarriage of persons with a tendency to otosclerosis. They should guard against catching cold and should avoid cold douches on the head and keep away from the seashore. The question of preventing conception should also be considered, as pregnancy usually brings an aggravation of the trouble.

Medizinische Klinik, Berlin

May 10, X, No. 19, pp. 795-836

70 Diphtheria. (Postgraduate Lecture.) B. Bendix.
71 *Present Status of Paresis. (Die jüngsten Fortschritte auf dem Gebiete der Lehre von der progressiven Paralyse.) A. Pilcz.
72 Electric Treatment of Obesity. (Das Bergoniésche Entfettungsverfahren.) A. Fürstenberg.
73 Pregnancy Undisturbed by Abdominal Operations. (Toleranz des graviden Uterus.) A. Haymann.
74 Influence of Diuresis on Elimination of Salvarsan. (Ausscheidung des Salvarsans im Urin bei intravenöser Injektion konzentrierter wässeriger und konzentrierter Serum-Salvarsanlösungen.) K. Kotter.
75 Salvarsan in General Practice. R. Lenzmann. Commenced in No. 18.
76 Influence of Radio-Active Substances on Immune Serums and Infected Animals. J. Kemen and F. Diehl.
77 *Reaction to Luetin is Specific for Syphilis; the Wassermann Reaction Not Specific. (Ueber Lues.) H. Much.

71. **Paresis.**—Pilcz regards progressive paralysis as more than an affection of the brain alone; the cerebral-nervous symptoms are merely one element in the syndrome. This has been established beyond question, he says, by the positive findings with the Abderhalden test in respect to kidney, heart, spleen and liver tissue in addition to brain tissue. The predisposition to paresis may lie in the individual or in the special strain of spirochetes or in climatic or other modifications of the spirochetes, or in all these factors combined; "paralyticus nascitur et fit." The assumption of an individual predisposition is sustained by the frequent observation that the persons who develop paresis had an unusually mild form of syphilis in its earlier stages, showing an inherent abnormal mode of reaction to the infection. Pilcz cites recent authorities who announce that paresis seems to be becoming more prevalent in tropical countries and Japan, and also cases of conjugal progressive paralysis and tabes are becoming more frequent everywhere. Further experience is confirming also the lack of any febrile affection after the syphilis was acquired, in the history of a long series of patients with paresis, while a history of some febrile infection was almost invariably encountered among their syphilitic mates who had escaped progressive paralysis. This is the basis of von Wagner's tuberculin-fever therapy in treatment and prophylaxis of paresis, and Pilcz reiterates that favorable reports on this are accumulating from Tamburini and Battistessa in Italy, Siebert and Glouschkoff in Russia, Hudovernig and Wachsman in Hungary, and Meyer, Friedländer, Röper and Pilcz himself in Germany and

Austria. The fever therapy with staphylococcus vaccine, with nuclein or salvarsan might be usefully combined with the tuberculin-fever therapy. Nonne emphasizes the logical favorable action of the induced febrile reaction with its leukocytosis now that Noguchi has shown that the spirochetes in the brain lie in tissues which otherwise are almost entirely reactionless.

77. **The Luetin and Wassermann Reactions as Guides to Treatment.**—Much summarizes his conclusions from study of these reactions in syphilis in the statement that when it is a question of ascertaining whether the patient has ever had syphilis, the response to the luetin test is most instructive. But when it is a question of ascertaining whether the organism is still under the influence of the syphilis toxin, then the Wassermann test is more instructive. As a guide to treatment, the effort must be made to render the Wassermann negative, as this is a manifestation of destruction of tissue. On the other hand, the luetin reaction—as the expression of production of specific immune bodies—should be kept positive.

Mitteilungen aus den Grenzgeb. der Med. und Chir., Jena

XXVII, No. 5, pp. 807-933. Last indexed May 23, p. 1698

78 *Increased Resistance of Peritoneum to Infection in Treatment of Appendicitis. S. Solieri.
79 *Organic Basis for Epilepsy. (Beziehungen von organischen Veränderungen der Hirnrinde zur symptomatischen Epilepsie.) W. Denk.
80 Operations for Benign Stomach Disease; 128 Cases. (Zur Chirurgie der gutartigen Magenerkrankungen.) M. Krabbel and H. Keinitz.
81 Embolic Aneurism as Complication of Acute Endocarditis. O. Lindbom.

78. **Enhanced Resistance of the Peritoneum in Acute Appendicitis.**—Solieri was a pioneer in efforts artificially to increase the resisting powers of the peritoneum preliminary to operations and in treatment of acute infections. Various chemicals have been used to rally the phagocytes in the region, but his experimental work seems to have demonstrated that a sterile culture of the colon bacillus is by far the most efficient of all substances tested to date to accomplish this purpose. Preventive injection into the guinea-pig peritoneum enhanced twenty-fold its resisting powers against living and virulent cultures of the same species. On this basis he assumed that the colon bacillus toxin already in the peritoneum in acute appendicitis would answer the purpose of a preliminary treatment from without, attracting the phagocytes and generating agglutinins, and consequently that after excising the appendix the peritoneum can be left tranquilly unmolested from without, leaving the appendicectomy incision completely sutured, without draining, when there is reason to assume the organism is capable of vigorous phagocyte action and agglutinin production. After removal of the disease focus in the appendix the peritoneum, under the influence of the colon bacillus toxin, finds its resisting powers so enhanced that it needs no further aid from without. In a series of 336 acute appendicitis operations he found only twenty-seven cases in which the conditions were favorable for this, namely, the patients were young and vigorous; they had had previous attacks of appendicitis testifying to abundant bacillus-toxin production; the delay before operation was not over twelve to forty-eight hours after the first symptoms; the blood showed pronounced leukocytosis and pronounced reaction to the Rivalta serum test; there was also considerable febrile reaction; the pulse was strong and regular; the urine showed that the kidneys were in good condition; there were no signs of other disease, and the appendix had not perforated and the reaction of the peritoneal serosa, as estimated during the operation, was regarded as adequate for the purpose. The details of the series are tabulated, all showing rapid and complete recovery and almost invariably by primary intention.

79. **Connection between Organic Changes in the Brain Cortex and Symptomatic Epilepsy.**—Denk gives an account of considerable experimental work on dogs and rabbits and analysis of 33 clinical cases of brain tumors, only 5 of which were without epilepsy, and 28 cases of epilepsy with operation or necropsy findings in nearly all. All this material is sifted and compared, and certain common traits are thus rendered evident. Aseptic organic changes in the brain do not seem able of themselves to induce epilepsy. There is always some accessory factor in the cases in which the epilepsy develops. This may be an inherited predisposition; this alone is liable to be enough to start the epilepsy without any organic changes. Alcoholism is liable to be the subsidiary factor which, superposed on the organic changes, may bring on the epilepsy even in the not otherwise predisposed. Tumors, inflammation and mechanical irritation may bring it on with a natural predisposition. The cicatrix from an operation is liable to induce epilepsy when superposed on alcoholism or a predisposition, even in cases in which there had been no tendency to epilepsy before the operation on the brain. The above conclusions impose the necessity for an early operation without delay when internal measures have failed, seeking to forestall the development of extensive pathologic changes in the brain. Another practical conclusion is that it is immaterial what living material is selected to close defects in the skull and interpose between tissues; all are absorbed in time, whether dura, fascia or other living material is used. The favorable reports from plastic operations of the kind with dura are the result, Denk insists, of the buffer action of the interposed tissue as long as it persisted, the blood drawn during the operation and the manipulation of the cortex.

Münchener medizinische Wochenschrift

May 5, LXI, No. 18, pp. 969-1024

82 Small-Pox Infection and Vaccination as they Influence Each Other. (Pockeninfektion und Vakzination in ihrer gegenseitigen Beeinflussung.) C. Baumler.
83 Intracutaneous Tuberculin Test on Guinea-Pigs More Instructive than Cutaneous. P. Esch.
84 Percutaneous Tuberculin Therapy. A. Kutschera.
85 Treatment of Paralysis of the Respiration by Intratracheal Insufflation of Oxygen. (Behandlung von Atemlahmungen mit Sauerstoffeinblasung in die Luftröhre.) E. Leschke.
86 Negative Effect of Vaccine Therapy on Developed Typhoid; Eight Cases. E. Allenbach.
87 Serodiagnosis of Pregnancy by Nitrogen in the Dialysate. (Zur quantitativen Ausführung der Abderhaldenschen Schwangerschaftsreaktion mittels der Stickstoffbestimmung im Dialysate.) W. Griesbach.
88 Serodiagnosis of Pulmonary Tuberculosis. (Das Abderhaldensche Dialysierverfahren bei Lungentuberkulose.) J. Gwerder and O. Melikjanz.
89 Commercial Vitamins. (Zur klinischen Bedeutung der Vitamine.) P. Hussy.
90 In What Form Is Calcium Found in the Blood? (Kalk im Blute.) O. Loew.
91 Heart and Vessel Tonics May Be Effectual in Bronchial Catarrh. (Gefass- und Herzmittel bei Bronchialkatarrh.) M. Saenger.
92 Tuberculous Processes at Pylorus and in Stomach Wall. H. Schlesinger.
93 Gamma Radium Rays Produced in Roentgen Tubes. F. Dessauer.
94 Elastic Rubber Ball for Pessary to Correct Prolapse. (Einfacher Retentions-Apparat bei Senkung und Vorfall des Uterus und der Scheidewande.) Doldi.

Therapeutische Monatshefte, Berlin

May, XXVIII, No. 5, pp. 309-388

95 *Systematic Restriction of Fluids in Treatment of Bronchiectasia and Chronic Bronchitis. G. Singer.
96 *Benzol in Myeloid Leukemia. N. D. Liberow.
97 Subcutaneous Injection of Calcium Lactate Helps to Cure Inflammatory Processes. E. Landsberg.
98 Corpus Luteum Extract in Treatment of Uterine Hemorrhage. E. Landsberg.
99 Scientific Cooking for the Sick. (Die diätetische Küche.) W. Sternberg.
100 *Treatment of Associated Gout and Diabetes. C. von Noorden.
101 Addition of 0.13 per cent. Salicylic Acid Alleged to Keep Emulsions for a Week. (Zu der Zersetzlichkeit von Emulsionen.) E. Apolant.
102 *Danger of Error from Similarity of Names of Certain Proprietaries. (Aehnlich klingende Arzneinamen.) W. Heubner.
103 *Lay Appreciation of German Commission on Pharmacy and Chemistry. (Die Arzneimittelkommission.) W. Heubner.

95. **Treatment of Bronchiectasia and Chronic Bronchitis.**—Singer is enthusiastic over the benefit derived in cases of this kind from reduction of the intake of fluids. The expectoration decreased at once and with it the cough in cases of chronic bronchitis and purulent bronchiectasia. The

patients are given abundance of mixed food but the total amount of fluid in the twenty-four hours, in soups, beverages, etc., is restricted to 600 c.c. On the fourth day the patient is encouraged to drink at will, thus thoroughly flushing out the system. Then he is restricted anew in the intake of water, down to 400, 300, or 200 c.c. for the next three days. It is sometimes advantageous to give in the form of wine the quantum of fluid allowed.

Slices of lemon or orange also help to quench the thirst, and certain bonbons. The thirst may also be combated by a sedative taken into the stomach, but he was very seldom compelled to resort to these measures. When the patient once gets accustomed to the restriction he can keep it up for weeks without discomfort or harm; the interposed days of unlimited fluid intake twice a week keep the system washed out so there seems to be no danger of uremia, etc. Brauer and Hochhaus also report gratifying results. Singer has seven patients who have been completely cured for two years, and a number of others keep in clinical health by repeating the "thirst cure" for several weeks two or three times a year. No by-effects were ever observed. In the majority of cases the patients gain from 20 to 25 pounds in a few weeks as the drain from the sputum production stops. Certain forms of pulmonary tuberculosis accompanying the chronic bronchitis seem to be benefited along with the latter by the thirst cure. An unsuspected suppurative process in the maxillary antrum kept up the bronchitis in one case until it was discovered and cured after which the bronchitis rapidly subsided under the restriction of fluids. A syphilitic factor does not interfere with the treatment and the latter does not exclude application of superheated air and other measures, including calcium, and inhalation of oxygen to combat putrefaction bacteria.

He has found the "thirst cure" effectual also in a number of cases of asthma long rebellious to all other measures. He regards asthma as a manifestation of the constitutional tendency known as the exudative diathesis. The transudation of fluid into the bronchi is an important element in the clinical picture of asthma, and this element can be abolished by restricting the intake of fluids. His theory that the "thirst cure" modifies osmosis has been confirmed by his findings in six cases after intravenous injection of a hypertonic salt solution. This had the same only a much more intense effect than restriction of fluids. Even slight changes in the concentration of the body fluids and serum suffice to attenuate or arrest completely the paroxysmal or continuous flooding of the bronchi with fluid. When this is accomplished, he adds, there is no further asthma, bronchitis heals, and the suppuration in bronchiectasia ceases.

96. **Benzol in Leukemia.**—Liberow reports a case showing an unmistakable improvement under benzol but he warns that it should not be given except with constant oversight over the blood and urine. He did not give large doses, keeping usually at 2 or 1.5 gm. When the leukocytes had dropped to 13,000, he reduced the dose still more, so that there was no further decline of leukocytes and the reds rose and kept above 5,000,000, the hemoglobin at 62 per cent. The patient was a woman of 34 with extreme ascites, probably from pressure on the portal vein by a leukoma; as the latter subsided under the influence of the benzol the circulation grew better and the ascites disappeared.

100. **Treatment of Associated Gout and Diabetes.**—Von Noorden states that in his experience with 6,000 diabetics in the last twenty years he has encountered scarcely a dozen with actually severe gout. As a general thing, associated gout and diabetes are both in a mild form, but there seems to be a special liability to serious complications: cardiovascular or kidney disturbance, cataract, retrobulbar optic neuritis, neuralgia and neuritis. The two last are most common and severe. The physician is apt to regard these painful affections as the work of the gout, and consequently directs treatment at the gout, when in reality hyperglycemia is responsible for the neuralgia and neuritis in most cases. This is what should be combated; the gout can be disregarded; the main point is to put the patient on an antidiabetic diet. Under this the glycosuria rapidly subsides; the hyperglycemia persists much longer—longer under these conditions than otherwise. But rebellious and chronic neuralgia, especially sciatica, can be cured in this way in the course of a few weeks when previously all kinds of treatment had given only transient improvement at best. The manifestations of the gout and any kidney trouble improve on the antidiabetic diet; it may be advantageously supplemented by physical measures when the hyperglycemia has subsided. This cannot be anticipated until after four or five weeks. To keep the patient in good condition afterward, at least on one day a week he should refrain from purin and carbohydrate food and every second month should have a purin-free two-week period. If the gout and diabetes are both severe he advises a diet to combat each in turn for two weeks. In conclusion he warns that persons with both gout and diabetes are unable to tolerate colchicum preparations as a rule.

102. **Possible Dangers from Confusion of Names of Proprietaries.**—Heubner remarks that manufacturing chemists seem to be running out of names for their productions, as so many of the new names are the same except for the change of a letter or two. Rabow, writing recently in the *Chemiker Zeitung*, comments that the handwriting of physicians is not always very distinct, and when medicines have closely similar names there is liable to be confusion. Heubner cites as examples "the laxative Darmol; the sedative, Dormal; the wood-preserving mixture, Dormial; the hypnotic Dormiol and the remedy Dormonal; the hypnotic, Chinoral; the internal antiseptic, Chinorol; the external antiseptic, Chinosal, and the remedy Chineonal."

103. See Propaganda Department.

Wiener klinische Wochenschrift, Vienna

May 7, XXVII, No. 19, pp. 597-614

104 Experiments on Animals Fail to Sustain Mechanical Origin of Arteriosclerosis. H. Schmiedl.
105 Local Differences in Temperature of the Skin within Normal Range with Apical Affections. W. Heinz.
106 *Roentgen-Rays and Benzol in Leukemia. A. Pulawski.
107 *Treatment of Chronic Leg Ulcer with Radium Emanations. J. Saphier.
108 *Favorable Effect of Intravenous Injections of 10 per cent. Salt Solution to Arrest Hemoptysis. J. Moczulski.
109 Suggestions for Internal Equipment of Hospitals. M. Setz.

106. **Treatment of Leukemia.**—Pulawski's case of lymphatic leukemia emphasizes the importance of combining roentgenotherapy with benzol. His patient was a woman of 51 who for two years had had enlargement of lymph-nodes in various regions and an abdominal tumor. Her present complaints were of sacral pains and pain in the left abdomen, weakness and cough, with signs of mild kidney trouble and the blood findings typical of lymphatic leukemia. Under six Roentgen exposures in nine days the whites dropped from 425,600 to a third; this was followed with 50 gm. benzol in sixteen days and the whites dropped to 8,400. There was some fever during the last week or so of the benzol course. Then the Roentgen exposures were resumed, four being given in nineteen days. After suspension of the benzol the whites continued their decline, finally reaching 1,100 and then 2,600 by the end of the three months' course of treatment. The general condition has continued to improve as well as the blood-picture, the lymphocytes dropping from 90 to 41 per cent., the neutrophils climbing from 10 to 49 per cent. The lymph-nodes have returned to normal size and the spleen to a quarter of its first size. The anemia was quite pronounced when the benzol course was concluded, but improved under iron, arsenic, calcium glycerophosphate and cod liver oil.

107. **Radium Emanations for Leg Ulcer.**—Saphier states that in ten of twenty-one rebellious cases of old leg ulcer a complete cure was realized under a course of radium emanation treatment. Material benefit was realized also in six other cases. No effect was apparent in five.

108. **Hypertonic Saline Infusion for Hemoptysis.**—Moczulski states that in nine cases of hemorrhage from the lungs

the tendency to hemoptysis was favorably influenced by intravenous infusion of 10 c.c. of a 10 per cent. salt solution. The effect is not apparent at once and it does not protect against recurrence of the hemoptysis. No influence was apparent in purpura and other hemorrhagic affections.

Zentralblatt für Chirurgie, Leipsic

May 9, XLI, No. 19, pp. 801-840

110 Improved Technic for Resection of Lower Esophagus. (Witzel's Verfahren fur die Resektion des Oesophagus im kardialen Abschnitt.) H. Schwers.

Zentralblatt für Gynäkologie, Leipsic

May 9, XXXVIII, No. 19, pp. 681-712

111 Hypophysis Extract to Stimulate Peristalsis after Operations. E. v. Konrad.
112 Coitus Interruptus as Cause for Ovarialgia. A. Herzfeld (New York).

Gazzetta degli Ospedali e delle Cliniche, Milan

XXXV, Nos. 50-54, pp. 521-576

113 *Action of High Frequency Currents on the Blood-Pressure in Connection with the Permeability of the Kidneys. M. Fontana.
114 Epigastric Hernia. N. Federici.
115 Cysts of the Spermatic Cord Originating in Connective Tissue. R. Mosti.

113. **Electric Currents and the Blood-Pressure.**—Fontana comments on the contradictory experiences related by different clinicians in respect to the action of the high frequency currents on the blood-pressure, some reporting considerable reduction in abnormally high pressures while others have observed nothing of the kind. He had similar contradictory experiences himself and he set out to discover the cause for this variability in the action of the currents. Analyzing forty-seven cases he found that the blood-pressure was constantly reduced when the kidneys were normally permeable, but that they failed in this influence when the kidney functioning was below par. The current causes slight dilatation of the vessels, and this in connection with the stimulation of metabolic processes which it induces, causes a throwing off of waste products through the kidneys if they are equal to this task. The result is a marked drop in the blood-pressure. The outcome therefore depends on the permeability of the kidneys.

Policlinico, Rome

April, XXI, Surgical Section No. 4, pp. 153-204

116 Blocking the Inferior Maxillary Nerve. (Nuova technica per le iniezioni neurolitiche nel tronco del nervo mascellare inferiore a livello del foro ovale.) F. Bonola.
117 Starch-Digesting Properties of Urine Unreliable Index of Kidney Functioning. (La determinazione amilolitica nelle urine come metodo di diagnosi della funzione renale.) E. Pirondini.
118 Echinococcus Cysts in Muscle or Kidney; Three Cases. L. Longo.

Riforma Medica, Naples

May 2, XXX, No. 18, pp. 476-504

119 Chronic Progressive Bone and Joint Disease. (Endocrinopatologia e patogenesi delle osteo-atropatie croniche progressive.) R. Massalongo. Commenced in No. 17.

Brazil Medico, Rio de Janeiro

April 15, XXVIII, No. 15, pp. 143-152

120 Treatment of Ozena by Intravenous Injections of Tartar Emetic. G. Vianna.
121 Development of the Toxoplasma Canis in the Animal Body. (Toxoplasmose. Evolução do toxoplasma canis no systema nervoso do pombo e as lesoes por elle produzidas.) J. B. Arantes.
122 *The Liver in Chronic Malaria. (O figado no paludismo chronico.) C. Fraga.

122. **The Liver in Chronic Malaria.**—Fraga's extensive experience with chronic malaria has demonstrated that this disease has a tendency to spare the liver. True malarial disturbances in the liver are comparatively slight. The cirrhosis of the liver so often encountered in chronic malaria is due mainly to the same causes, alcoholism, etc., which induce it under other conditions. The anemia in chronic malaria is often due to helminthiasis which is particularly prevalent in the malaria zones. His functional tests applied to the liver in chronic malaria, including the alimentary lipemia or hemoconiae test, all revealed merely comparatively slight disturbance in liver functioning, curable by the ordinary measures.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

LVIII, No. 4, pp. 237-304

123 Chemotherapy of Cancers. C. Vermeulen.
124 *Familial Orthostatic Urobilinuria. F. A. Steensma.

No. 5, pp. 305-376

125 Fibrin as Factor in the Coagulation of the Blood. E. Hekma.
126 Fatal Electric Accidents. (Iets over den electrischen dood.) D. Brocx.

No. 6, pp. 377-460

127 Congenital Megacolon. (Ziekte van Hirschsprung.) A. E. Sitsen.
128 Epidemic Poliomyelitis in the Netherlands. F. H. van Loon.
129 Collapse after Injection of Pituitrin. A ten Doesschate.

No. 7, pp. 461-528

130 Unreliability of the Urobilinogen Reaction with Ehrlich's Aldehyd Reagent. F. A. Steensma.
131 Advantages of Returning to Work at once after Clinical Recovery from Accidents to Ward off Traumatic Neuroses. J. A. Korteweg
132 *Complications Liable with Reduction of Congenital Dislocation of the Hip Joint. P. Redard.
133 Anthropologic Research on Island Near Sumatra. J. P. K. de Zwaan.
134 *Prevalence of Tuberculosis among the Elderly with Bronchitis. J. Sanders.

124. **Familial Orthostatic Urobilinuria.**—Steensma gives a family chart through five generations with sixteen members who have orthostatic urobilinuria: that is, there is urobilin in the day urine and not in the night urine. Somewhat similar findings were encountered in a second family. He thinks that there must be a family tendency in these cases for the ductus venosus not to become impervious as under normal conditions. The patent duct would permit some of the blood from the intestines to get into the blood stream without passing through the liver.

132. **Tardy Complications after Reduction of Congenital Hip Joint Disease.**—Redard refers to the development of ostitis or osteomalacia in the joint after apparently successful reduction of congenital dislocation. Five, eight or ten years later a tendency to coxa vara may become apparent, with more or less atrophy and deformity of the head and upper end of the femur. The ossification centers probably were injured to start with. Such cases teach the necessity for keeping patients long under supervision and not to have the immobilizing appliance worn too long, not over six months at most.

134. **Tubercle Bacilli in Apparently Non-Tuberculous Elderly Persons.**—Sanders examined the sputum of all the inmates over 60 years old of a Rotterdam hospital who were apparently free from tuberculosis but had signs of chronic bronchitis. He obtained sputum in thirty-nine cases and found tubercle bacilli in them in nine. This shows that the apparently harmless bronchitis of the elderly may be an unsuspected source for infection of others.

Hospitalstidende, Copenhagen

May 13, LVII, No. 19, pp. 577-608

135 Technic for Determination of Nitrogen in the Urine. (Klinisk Metode til Kvælstofbestemmelse i Urin.) M. Krogh.
136 Improved Technic for Determination of Alveolar Carbon-Dioxid Tension. (En klinisk Metode til bestemmelse af Kulsyrespændingen i Lungeluften.) L. S. Fridericia.

Norsk Magazin for Lægevidenskaben, Christiania

May, LXXV, No. 5, pp. 505-648

137 History of Medicine and Medical Profession in Norway, 1814-1914. (Hundredaarets utvikling av Norges lægevæsen og lægevidenskap.) F. G. Gade.
138 Congenital Diverticula in Intestines and Their Consequences; Two Cases. N. A. Nicolaysen.
139 Transposition of the Viscera. (Utebleven rotation av colon. Coecum mobile. Ileus.) R. Ingebrigtsen.
140 Improvement under Benzol in Case of Myeloid Leukemia. N. B. Koppang.
141 Salvarsanized Serum in Treatment of Syphilis of the Nervous System. G. H. Monrad-Krohn.

Ugeskrift for Læger, Copenhagen

May 7; LXXVI, No. 19, pp. 839-910

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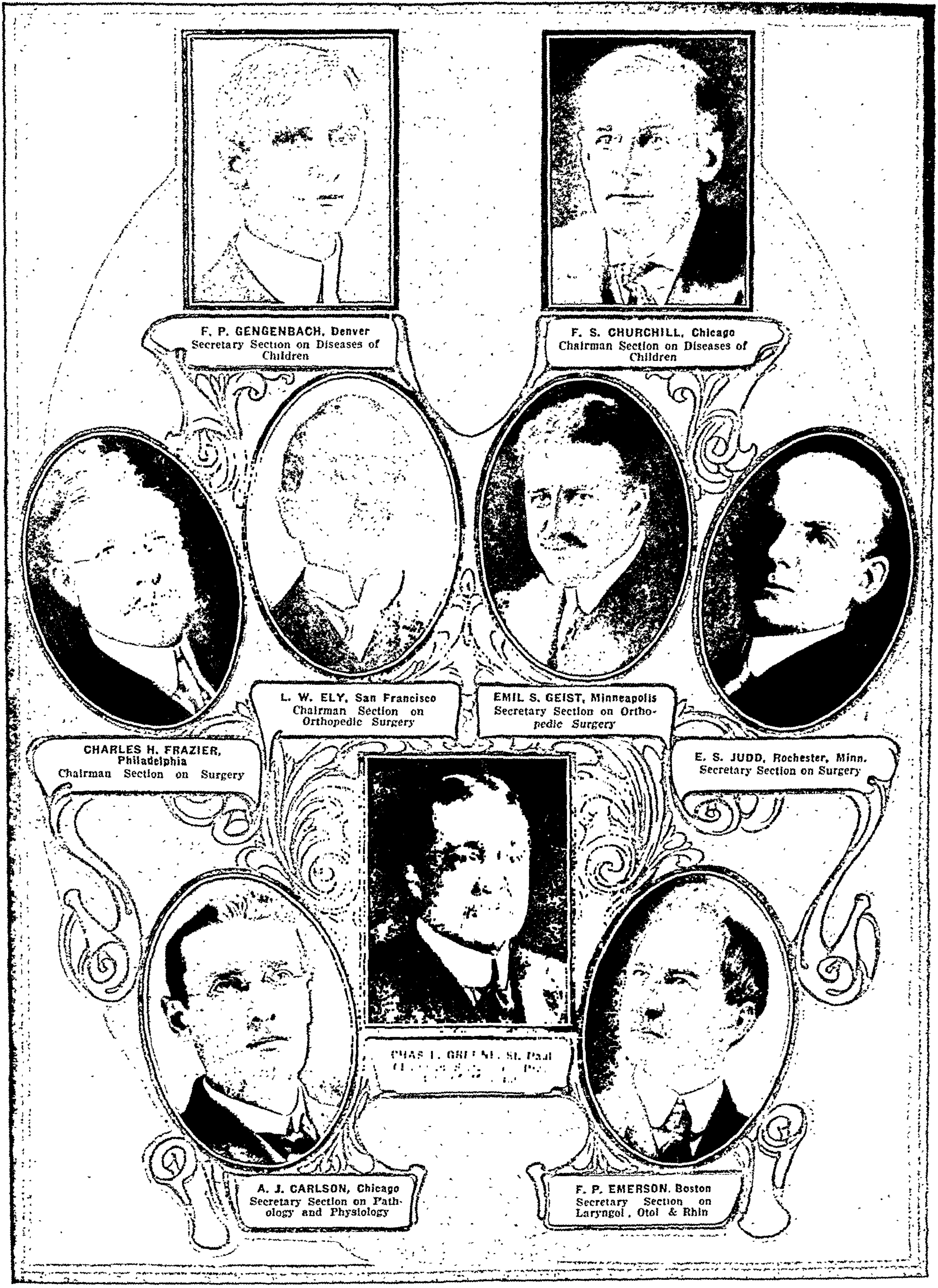

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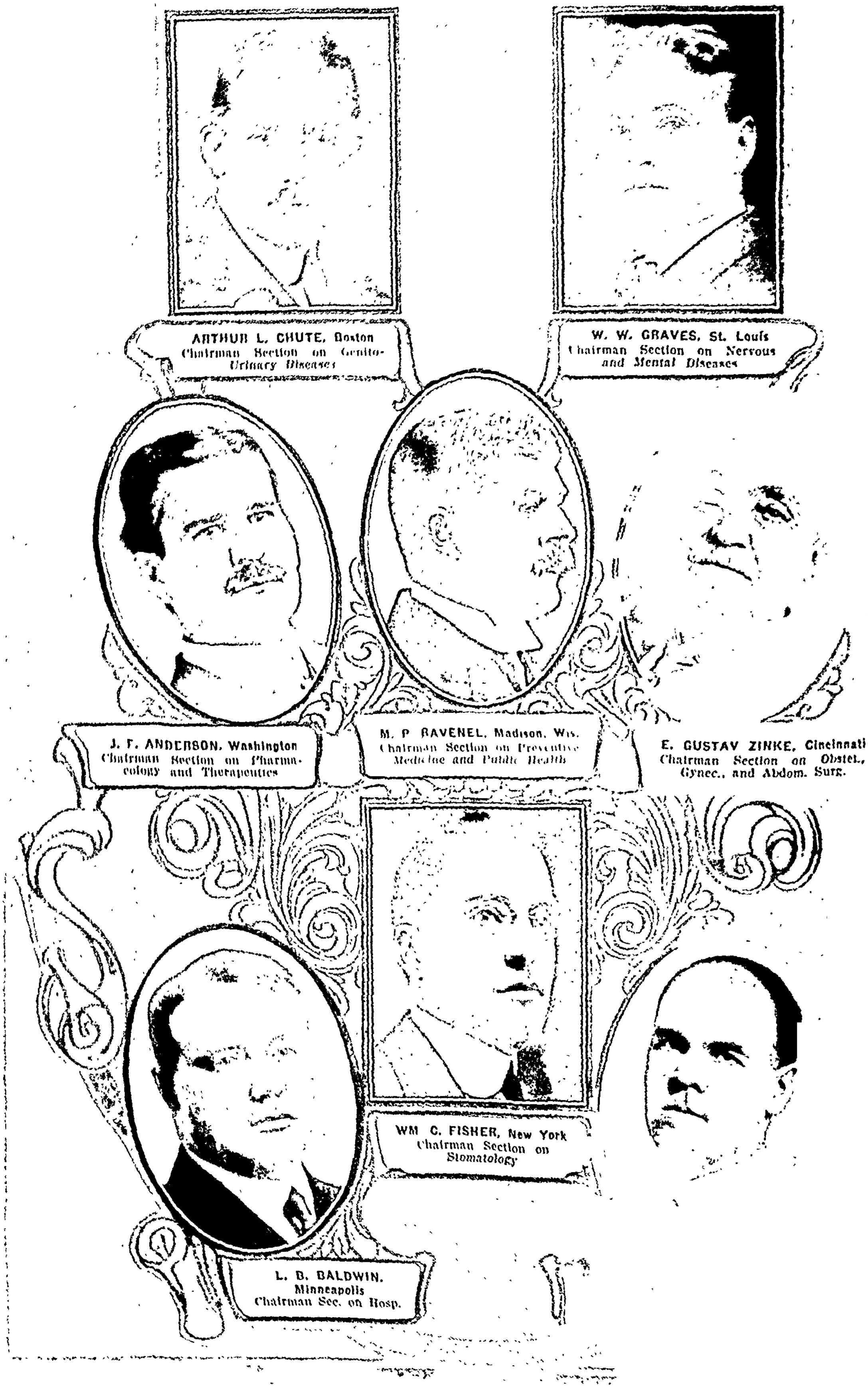

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VOL. LXII, No. 25 CHICAGO, ILLINOIS JUNE 20, 1914

HOOKWORM DISEASE

ITS RAVAGES, PREVENTION AND CURE *

JOHN A. FERRELL, B.S., M.D.
Assistant Administrative Secretary, Rockefeller Sanitary Commission
WASHINGTON, D. C.

Hookworm in sections in which it prevails is one of the most common, most insidiously harmful, and most easily prevented diseases known to man. It causes human suffering and economic waste altogether out of proportion to its apparent death-rate. Many ills which have been attributed to mental and moral weakness of whole bodies of people are now definitely known to be due to this infection, and curable with its cure. Its eradication is one of the most important and pressing problems before the people of the southern half of the United States and of other semitropical and tropical lands. Moreover, the progress which has been made in recent years completely demonstrates at once the vast benefit, in terms both of human happiness and of industrial efficiency, attendant on stamping out of the disease, and also the complete adequacy, in stamping it out, of perfectly simple precautions prescribed by the primary rules of health and even of common decency.

WHERE HOOKWORM DISEASE IS FOUND

Hookworm disease is found more or less prevalent in the entire zone lying within 30 degrees north and 30 degrees south of the equator, or in practically all the tropical and semitropical countries, in which are more than half the people of the globe. In many of these countries this anemia-producing infection is extremely prevalent, in a severe form. In Porto Rico and the low-lying districts of Colombia, and in many of the sugar plantations of Ceylon and Dutch Guiana, for example, infection was found to involve 90 per cent. of the entire population. Since 1904 more than 300,000 persons have been treated for hookworm disease in Porto Rico, with the result that, whereas in 1900 and 1901 the deaths from anemia numbered 11,875, or 33.2 per cent. of the total deaths in the island, and in 1902 and 1903, after some treatent for hookworm, 6,830; they had fallen in 1904 and 1905 to 4,693, and continued to decrease until they were in 1906 and 1907 only 1,134, and in 1907 and 1908, 1,785. The majority of Porto Ricans, long noted for laziness and shiftlessness because of this anemia, are now known to have been the victims of a specific infectious disease; the wholesale treatment of which is revolutionizing the island, and bringing health and prosperity where almost universal misery and poverty reigned.

In the United States, the disease is found throughout the states south of the Potomac and Ohio rivers, in Arkansas, Missouri, Oklahoma, and Texas, and also in California. Its prevalence and severity vary widely within the state and even in a county, in some localities less than 1 per cent. of the people being infected, and in others more than 90 per cent. Generally speaking, the heaviest infection is found on the light, sandy soil of the coastal plains, the lightest infection on the stiff, clay soil of the Piedmont region, and an intermediate infection among the foothills and mountains. It is peculiarly a disease of the agricultural districts, which goes far to explain the long-puzzling lack of physical and intellectual vigor to be noted among large classes of people in what ought to be one of the healthiest and most prosperous sections of the country (Figs. 1, 2 and 3). Examination of more than 415,000 school children during the four years 1910-1913 in 413 counties of the eleven Southern states has revealed 43 per cent. of them infected. Of more than 700,000 persons of all ages taken at random in the same territory, 35 per cent. were found to be suffering from this disease, and in a vast majority of cases were completely cured.

When individual treatment has been accompanied by simple sanitary reforms to prevent reinfection, most noteworthy benefits have been derived by entire communities. For example, in the camps of the Continental Coal Corporation, at Pineville, Ky., where 1,800 men were on the company's pay-rolls, in June, 1911, about 65 per cent. were infected with hookworm, there were about 150 cases of typhoid, and cases of bowel complaint were numerous. Soil pollution through lack of sanitary water-closets was practically universal, the water-supply was contaminated, and flies had free range. Measures were taken to eradicate the hookworm by providing sanitary closets, which stopped soil pollution and prevented flies from carrying the infection back into the houses, and the water supply was also safeguarded. As a result, in the year following, the same force of men loaded over 33 per cent. more coal on the cars than they did in the year before. Also there was not a single case of typhoid in [illegible] camps during the summer of 1912, and cases of [illegible]rhea were reduced to about one-half.

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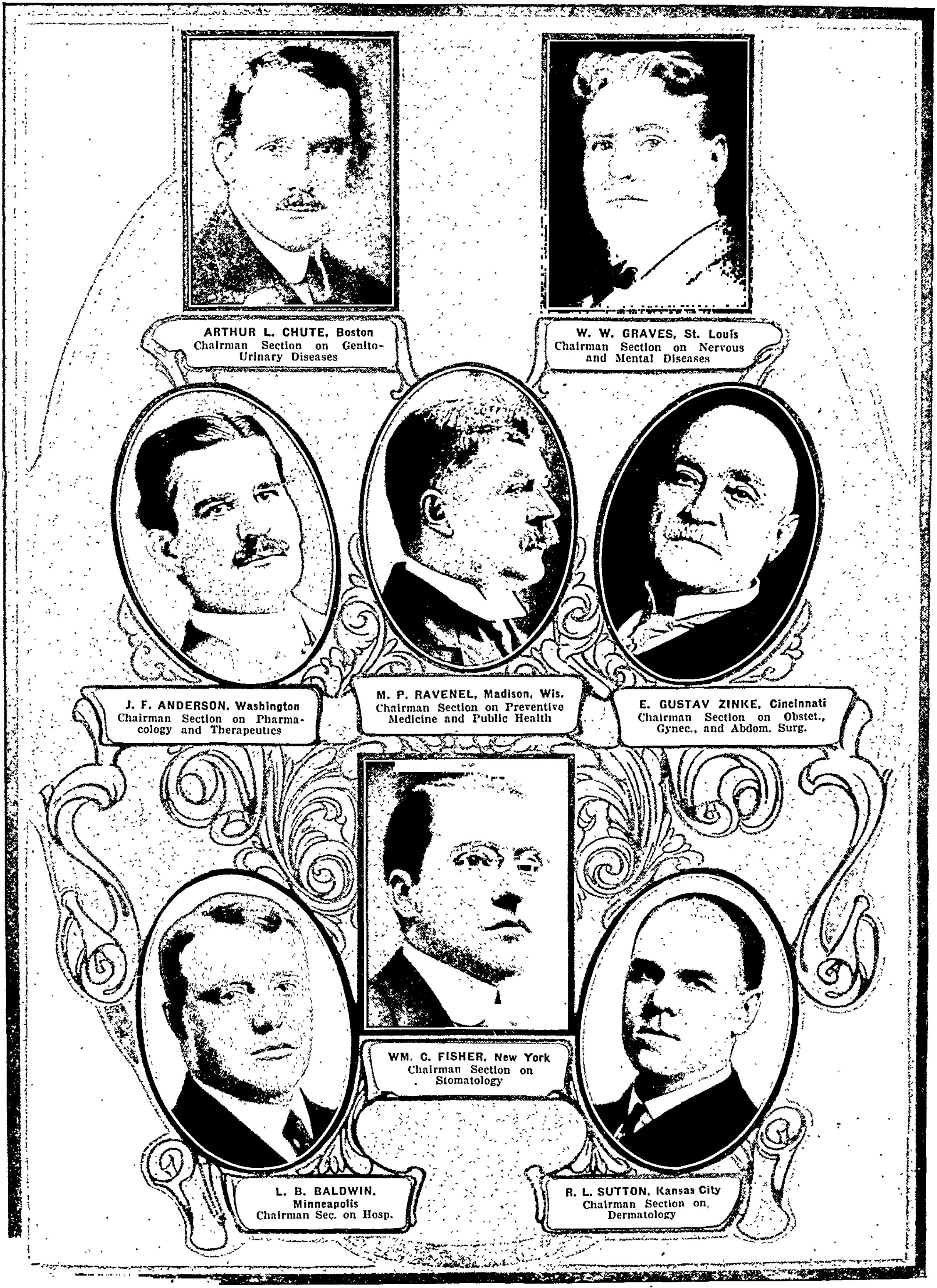
* This paper is one of a series on Public Health, prepared at the request of the Council on Health and Public Instruction, and reprinted for distribution to the public through state boards of health and other agencies. Other articles are being prepared and will be issued later. A list of the pamphlets can be secured from the Council on Health and Public Instruction, American Medical Association, 535 North Dearborn Street, Chicago.



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HOW THE HOOKWORM AFFECTS ITS VICTIMS

For generations hookworm disease has been insidiously spreading unrecognized and unchecked over the countries of the globe having a mild climate. Its victims, numbering many millions, have through centu-

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ries, no doubt, been hosts to the small blood-sucking intestinal parasite which causes the disease. Their strength has been sapped, their vitality lowered, their physical and intellectual growth stunted. They have been mastered in war, commerce and industry by the more hearty people of colder latitudes to the north. The social and economical importance of the disease is therefore almost beyond comprehension. The infection is in most instances so insidiously acquired by the unsuspecting victim that he and the members of his family, who are probably likewise being infected, do not know just when the effects of the disease began to manifest themselves. In the course of a few summers, however, a once healthy family has become pale and puny; a once industrious family has become languid and backward in its work; a once prosperous family has fallen into debt; a once proud family, owning valuable property, has been reduced by an easily curable and easily preventable disease to tenancy and to poverty. The children, once bright and well advanced in their school classes, begin to lose their zeal and their mental alertness when gradually robbed of their vitality. They fall behind in the struggle with their healthier classmates, and, finally discouraged and perhaps abused, give up school work in despair.

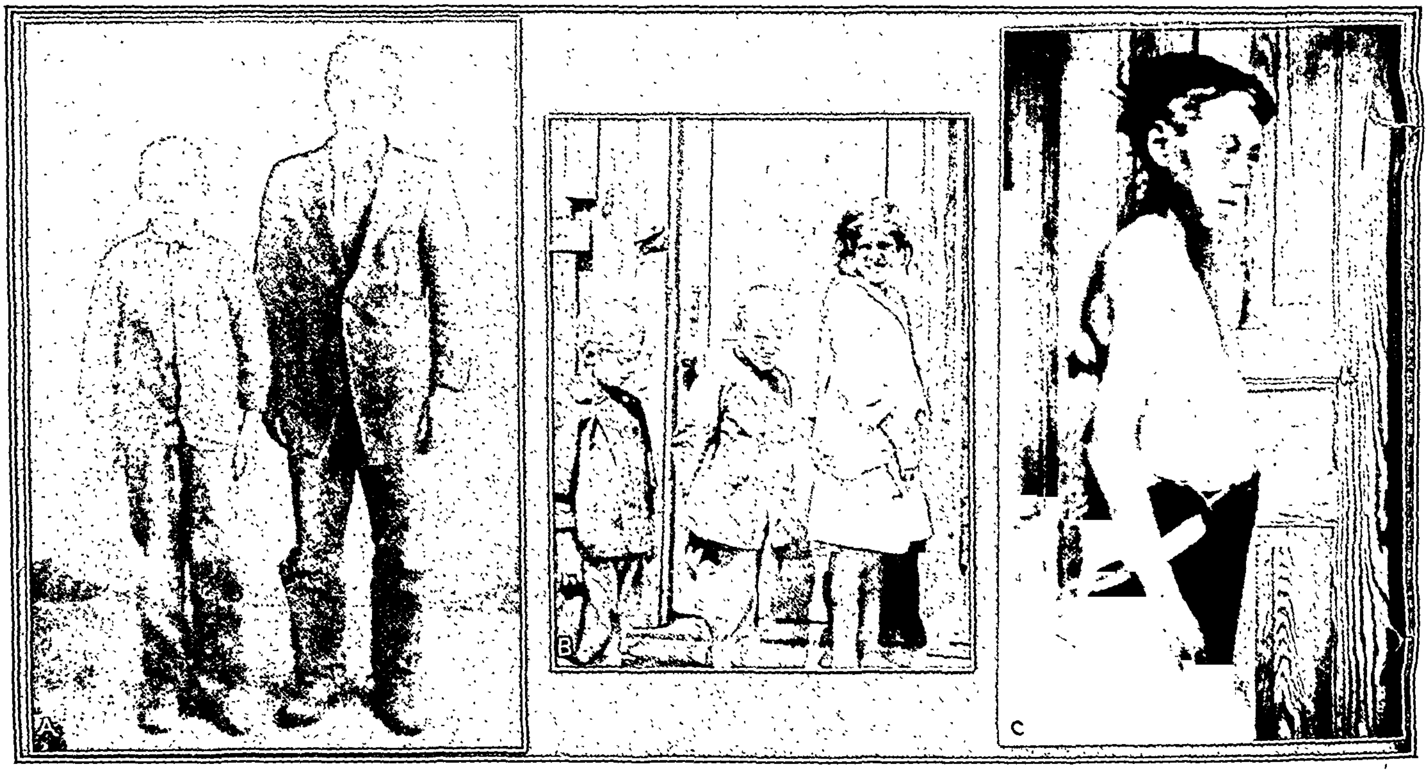

Fig. 1.—Effects of hookworm disease: *A*. Small boy is H. M. of Heber Springs, Ark., called "Chalky" from the extreme pallor of his face. "Chalky" is 18 years old, weighs 82 pounds, and uses chewing-tobacco, snuff and profane language. He is uncle of the larger boy, is two months older and 50 pounds lighter than his nephew, who is not infected. *B*. Three heavily infected children, aged 13, 9 and 7 years, of Wise County, Va. The boy was treated for consumption. Twenty grains of thymol brought 234 hookworms, a dwarf tapeworm and almost complete recovery. *C*. Boy, I. S., of Stokes County, N. C., severely infected. Note the "angel wings" shoulder-blades and the "pot-belly," characteristic symptoms.

GREAT ECONOMIC LOSS DUE TO THE HOOKWORM

This is no exaggerated picture of the harm wrought by the disease. The economic loss already stated in the case of the Kentucky coal-miners is to be found wherever the disease prevails. The physically sound coffee-picker in Porto Rico picks from 500 to 600 measures of coffee a day. Dr. Wickliffe Rose reports that he found scores of infected men there who could pick only from 100 to 250 measures a day, and the manager of one of the great haciendas, or plantations, told him that the disease had reduced the average efficiency of labor on the coffee estates to from 35 to 50 per cent. of normal. One of the largest cocoa plantations in Ecuador reports that 300 laborers on the place were so reduced by the anemias of hookworm and malaria as to be able to do not more than one-third of a reasonable day's work. The manager of a large British Guinea sugar estate reports that treatment for hookworm has doubled the working power of the gangs. A single California mine employing over 300 men is estimated to have lost 20 per cent. of the wages paid, or $20,000 a year, because it had to carry on the pay-roll a large body of men to replace those periodically unable to work because of hookworm anemia. In the South Atlantic and Gulf states the infection is heavier than in California, and the loss on the farms and in the cotton factories is enormous. The weavers in the Southern mills are not naturally inferior to the European immigrants who operate the New England looms. Their labor is less efficient in some instances because vast numbers of them are victims of the hookworm. The Southern farms are not lacking in fertility, nor are their owners, whose fathers fought under Lee and Jackson, lacking in sterling virtues; but thousands of men and women with the best blood of the land in their veins are made improvident and slothful by this infection, and the hundreds of cases in which these supposed faults of character have been reformed by hookworm treatment prove beyond question the enormous moral and economic cost of the disease.

GROWTH OF CHILDREN RETARDED

Hookworm retards the development of children to a remarkable degree. School and college records show that infected students, even though not apparently ill, average lower in their studies than those found free from infection. In one woman's college the average standing of fifty-six girls found infected was 77.75 per cent., whereas fifty-six girls taken at random from those in the institution found free from infection averaged 89.28 per cent. Similarly in an academy, a group of twenty-five infected men and boys averaged 64 per cent., and a non-infected group beside them averaged 86 per cent. Teachers in all parts of the South report marked improvement in zeal and intelligence, as well as in weight and physical appearance of children immediately on being freed from the parasites. One case from the field director of the hookworm campaign in Prentiss County, Miss., may be given as fairly typical of the experience of physicians in this work.

> "A young man that we treated furnished us the best recommendation that we could have had. He came to the office about the third week looking as if he had an advanced case of tuberculosis, and with a cough that appeared serious. He was such a picture of dejection, misery and lost hope, that he attracted the attention of the whole court-house crowd and many of them watched eagerly to see the results of the examination. One man asked me after he left, if I could cure him, and I replied that we would do our best. This man then kindly stated that he thought that I was doing the boy an actual wrong by holding out hope, as it was his belief that the boy would die in a very short time. This boy was instructed to return every week for his treatment until informed that he was cured. He did; and it was a standing request by the court-house officials that they be called each week as W. L. came in, so that they could see for themselves whether he was improving or not. On his first trip, one week later, he came in, and there was evidence of much improvement. He came in with a smile, showing more interest in things around, telling jokes to fellows in the office, when just one week before he had stood listless without a word to any one except to answer 'yes' or 'no' when a question was put to him. He informed us that on this trip, although he had taken his medicine only a week ago, he was feeling a great deal better; and when placed on the scales, I found that he had gained a number of pounds in weight. He was given three treatments, one week apart, and after waiting two weeks following the third treatment, he was found free from infection, and weighed 18 pounds more than he did previous to the first treatment. On the day that he first appeared at the dispensary he could hardly walk, and the last time that I saw him he started with another boy to walk 7 miles to his home."

THE PENALTY OF IGNORANCE AND NEGLECT

Such facts, of which hundreds of the same import might be cited, show the heavy price which the people of the South have been paying in loss of money, health and intellectual power, for ignorance and carelessness concerning a disease which is easily diagnosed, easily cured and easily prevented. It is due solely to neglect of sanitation which permits the eggs of the small intestinal worms which pass with the excreta from the bowels of infected persons to find lodgment on the soil, and then hatch into infective larvae ready to carry the disease to some other human being or reinforce the infection of the original victims.

There is no other disease perhaps which is so well understood in every detail, and which can be so satisfactorily explained to a layman. Nor is there any other widely prevalent disease against which the lay community can so readily and surely protect itself by simple precautions. Its conquest virtually resolves itself into a problem of education against soil pollution.

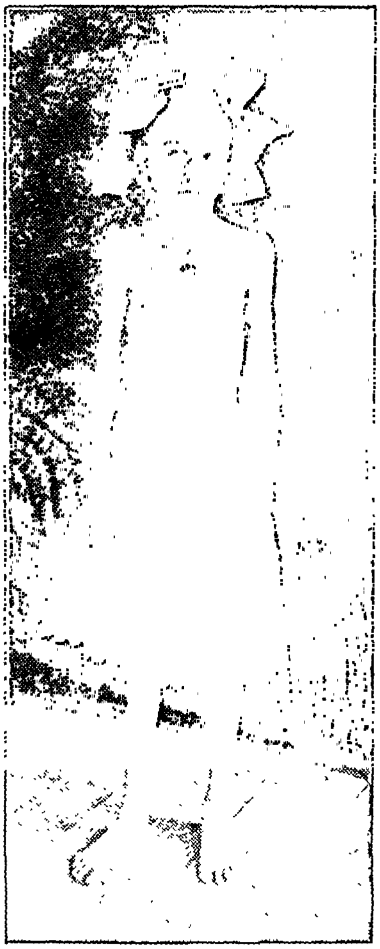

Fig. 2.—D. C. of Grant County, Ark., aged 16, practically an invalid from childhood, has been treated for malaria and tuberculosis. She was found heavily infected with hookworms and was given treatment.

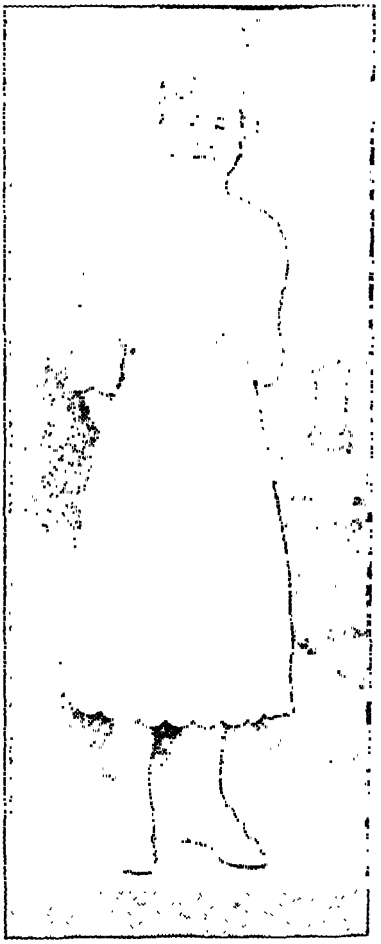

Fig. 3.—D. C. as she is to-day.

The largest possible public therefore should be brought to know in detail the history of hookworm disease; the distribution and life cycle of the parasite causing it; its symptoms, method of cure, and, most important of all, means of absolute prevention.

HOW HOOKWORM DISEASE WAS FOUND

Hookworm disease is not new. It is only newly understood. The symptoms of the disease were described in the records of the Egyptian Empire, but its cause was not known. The hookworm itself was discovered in 1838 by Dr. Angelo Dubini, an Italian.

who while making a necropsy found the small white worm with its head buried in the membrane of the small intestine; but that this worm had anything to do with anemia was not suggested. When, however, in 1877, Grassi, another Italian physician, identified the eggs of this worm in the feces of anemic patients, it was suspected that the parasite was the cause of the disease. About the same time, Dr. Colomiatti, studying an obscure disease which had caused the death of many workmen on the St. Gothard Tunnel, discovered in the intestine of one of the tunnel victims more than fifteen hundred hookworms. This parasite, known as the Old World hookworm and named *Ankylostoma duodenale,* was carefully studied, its responsibility for certain types of anemia in Southern Europe demonstrated, and successful treatment for the disease developed.

The prevalence of hookworm disease in the New World was not recognized till much later. Nov. 24, 1899, Major Bailey K. Ashford of the United States Army Medical Corps, while treating anemia supposedly due to starvation caused by the hurricane in Porto Rico, identified the hookworm as the real cause of the wide-spread disease. He, however, supposed the parasite found by him to be the Old World type. In 1902 Dr. C. W. Stiles of the United States Public Health Service, having found the same disease in the Southern States, identified its cause as a different species of worm, now known as the New World type, or *Necator americanus.* It was then discovered that the worm found in Porto Rico was of this species.

Subsequent discovery of the same worm as the cause of anemia among the victims of the African lowlands suggests that the so-called New World type was brought to Porto Rico and the Southern states by the slave trade. This form also prevails in India, and has been carried to Jamaica, Trinidad and British Guiana by the Hindoo coolies brought there as laborers. The disease caused by one or the other of the two types of hookworm is now known in practically all tropical or semitropical countries, but all the worms look alike to everybody except the expert zoologists; they produce practically the same symptoms; substantially the same treatment is effective with all, and they can all be prevented by the same means.

HOW THE HOOKWORM LIVES AND WORKS

The hookworm in adult life is a small, round intestinal parasite about ⅓ inch in length, and about the size of No. 30 sewing thread. As a type it is found to infect man and numerous animals, such as the dog, the fox and the cow; but the particular species infecting man have not been found in animals, nor those of the lower animals in man. Only the type infecting man will be discussed here.

The life of the hookworm is made up of two periods. During the first period the worms are microscopic in size and live in the soil. It is in the soil that they hatch from microscopic eggs (Fig. 4) which were deposited there with the excrement from some person having hookworm disease. Neither the eggs nor the larval worms hatching from the eggs can be seen with the unaided eye. These minute worms will live for perhaps ten or twelve months under favorable conditions of warmth and moisture; but they cannot develop beyond this point unless they gain entrance into the body of some human being and find their way into the intestinal canal, usually the upper portion of the small intestine. The drying heat of the sun and the freezing weather of winter are destructive both of the development of the hookworm eggs and to the life of the larvae. For this reason the disease is rare in deserts and in countries having protracted cold weather. A porous, sandy loam soil, having reasonable shade, affords the most favored habitat for the hookworm larvae. Though in stiff clay soil conditions are much less favorable to these little worms, we often find that enough of them have lived and entered into the second period of their life's existence to cause heavy infection.

The second period of the hookworm's life is spent within the body of a human being. The great majority of the worms never reach this stage in their development. In fact, many of the eggs never hatch. Yet when we stop to consider that in some localities 90 per cent. of the people are severely infected, and that each infected person will daily cast off with the excreta from one to four million eggs on the soil, we can appreciate that even with this loss it will be almost impossible for one to escape infection in a section where wastes from the human body are not properly disposed of.

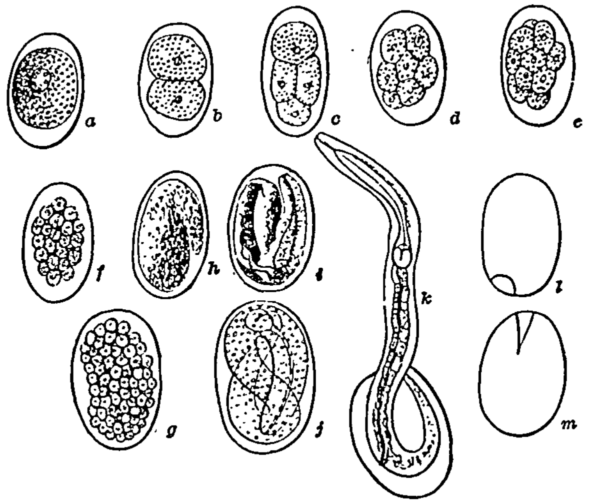

Fig. 4.—Development of Old-World hookworm: *a-g,* changes occuring in egg preparatory to developing of little worm; *h-k,* stages of the worm's development until it emerges from the egg-shell; *l, m,* empty egg-shells; greatly enlarged. (After Peroncito. Courtesy of C. V. Mosby Publishing Company.)

With these facts before us we at once want to know how these invisible filth-borne pests find their way to our small intestines. The answer may be a short story, but generally it is a long one.

It may be short because the little worms may cling to food which is swallowed by the unsuspecting victim. They may be carried on soiled hands; or, perhaps more frequently, may be swallowed along with uncooked foods, such as strawberries, plums, celery and lettuce, grown in or left to lie on ground polluted by human excreta.

Though some infection is thus taken through the mouth, the most of it is acquired through the skin in a very interesting way. In brief, this is the story of the hookworm's most common progress: Within a week of the hatching of the larvae they molt and shed their skin twice. They are protected by the second sheat, and are very tough. In this stage they possess the wonderful ability to burrow (Fig. 5) in a few minutes through the skin and to enter the tiny blood capillaries, where, carried along by the blood-current, they make a long journey through the body to the heart and to the lungs. In the lungs the blood-vessels are too small to permit them to pass through, so they begin to burrow again, and soon find themselves in the air-spaces of the lungs. Crawling along these they reach the wind-pipe and then the throat. Once there the worms are swallowed with saliva and food, and thus by this long journey find their way to the intestine, where they fasten on its walls and begin their blood-sucking.

One would think that the hookworms would have great difficulty in penetrating the skin and the blood-vessels in the lung, yet they do it. The fact can be easily demonstrated by experiment. If the polluted soil in which the larvae are known to be is moistened and applied to the skin, the point at which they enter will become inflamed and an eruption will appear, which is commonly known to the barefoot boys and girls as "ground-itch." Moreover, by the end of eight weeks, examination and treatment will show the person to be harboring adult hookworms, even though it may have been demonstrated that he was not infected up to the time he was brought in contact with the polluted soil. It should be remembered that the presence of "ground-itch" or "dew-itch," even though the skin may heal quickly, usually means that hookworms have entered the body and are beginning to rob the victim of his blood and vitality.

The second period in the life history of the hookworms begins with their entrance into the intestinal canal. There the male and female worms, after molting twice again, develop to adult life. From five to eight weeks is usually required for their growth. When grown they may usually be seen with the unaided eye. At this stage they fasten on the wall of the intestine, live for many years, and do the harm to be described next. Besides this the females deposit thousands of eggs, which, being mixed with the excreta, pass out on the ground to spread the disease.

Now that we have followed the complete life cycle of the parasites, let us study the disease caused by the adult worm in the intestine.

THE EFFECTS OF HOOKWORM DISEASE

When we consider that several hundred hookworms may live in the intestine at one time, and that they may live there for from six to ten years—sapping the blood, wounding the intestine, and poisoning the body—it is not strange that the body becomes diseased. The blood is needed to collect oxygen in the lungs and the food from the intestine, and distribute them over the body. In the disease much blood is lost. Some of it is taken into the bodies of the worms, and a great deal more is lost by bleeding from the small wounds made by the worms. In severe cases of the disease, the blood is reduced to one-fourth or one-sixth of what it should be. In such cases we find the victim's normal color replaced by a pale, sallow complexion; the lips are pale; the mucous surfaces generally are pale, and the skin is of a pale, yellowish hue. The eyes are listless, the pupils dilated and not very responsive to light; often they present a blank stare, fish-like in character. The hair is dry and scant, especially in the armpits. The face and the ankles are often swollen, anemic ulcers frequently appear on the legs, and the abdomen is prominent, giving rise to the term "pot-belly." The chest is flat, and the shoulder blades stand out prominently, suggesting "angel wings." When the disease occurs during the growing period there is a marked retardation in development; that is to say, a boy or girl may not be developed at 18 beyond what would be expected of one at 13 or 14 years of age. The appetite is often perverted, so that the sufferer has a craving for a particular kind of food, and often for certain substances not foods. For example, victims of the disease frequently crave clay, and for this reason are termed "dirt-eaters." Again, coffee-grounds or salt may be the substance desired.

The intestinal wall is considerably damaged by the worms, and becomes tender to pressure over the pit of the stomach. Where the worms bite, raw surfaces are left, so that it is easy for any germs, such as may cause typhoid fever or tuberculosis, to get into the body and set up a disease more violent in character, and more frequently fatal, than hookworm disease. There may be severe headaches, lassitude, dizziness and inability to sleep. The heart is poorly nourished by the impoverished blood, yet it is called on to do the work necessary to keep the body supplied with oxygen from the lungs and food from the digestive tract. As a result, the heart's action becomes labored, so that hookworm disease is frequently mistaken for heart-disease or Bright's disease. Most of these cases can easily be cured by getting rid of hookworms.

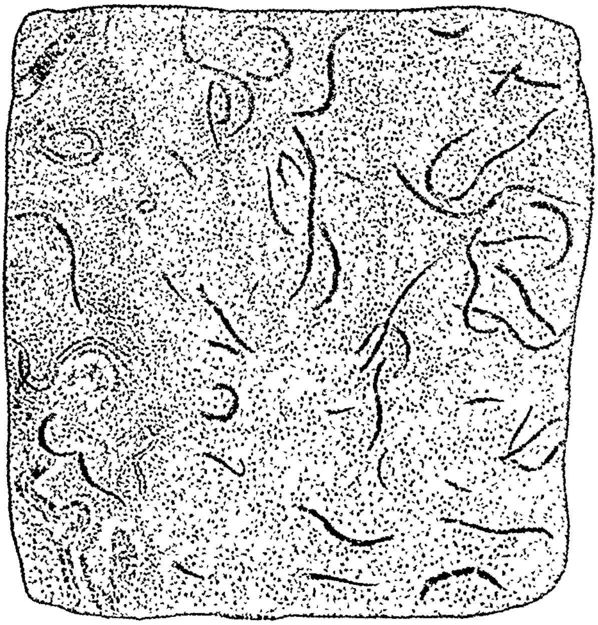
Fig. 5.—Slice of skin as seen under the microscope. Note how the younger hookworms are crawling through the skin. This is how "ground-itch" or "dew-itch" looks. (U. S. P. H. Service.)

It must not be inferred that every person who is infected with hookworms suffers with all the symptoms mentioned. Much of the infection is so mild that the presence of the disease might not be suspected. In cases of medium severity one or more of the symptoms will be present, but the existence of the disease cannot be confirmed until the eggs of the worms are demonstrated in the excreta by microscopic examination.

The disease, however, even in very mild cases, is a menace for two reasons: First, any infection exerts a handicapping influence on the victim. This has been shown among students who, though mildly infected, were underdeveloped in size and were backward in their studies; and, being below the standard, they were more subject to other diseases. Second, the persons mildly infected are carriers and distributors of the hookworm eggs, and may become responsible for the disease in a severer form in themselves and in other persons.

HOW HOOKWORM DISEASE SPREADS

We have seen how each of the female hookworms living in the intestines deposits hundreds—often from twelve to fifteen hundred—of eggs daily; that these eggs do not hatch while they remain in the bowel, but after they have passed out on the soil, where there is moisture and warmth—but not too much—they hatch into larvae. Both the eggs and larvae are too small to be seen with the naked eye. The larvae remain invisible in size unless they can get into the intestine, which they may reach by being swallowed with food or by entering the skin, usually of the feet, there producing "ground-itch" or "dew-itch," and then making a long journey through the body until the intestine is reached.

When infected persons go from place to place they spread the infection. It is thought that the negro slaves brought the disease to America from the West Coast of Africa. Likewise, the disease may be carried from one community to another. Suppose we have a school district at A where there is no infection, and the people are healthy and thrifty; and from this community the son and daughter of Mr. Jones visit the Smiths in the distant community of B, where 75 per cent. of the residents have hookworm disease, and the soil is teeming with the larvae; that is to say, there is heavy soil pollution. Neither the Smith nor the Jones family pays much attention to the use of privies; indeed, there is much doubt if either has one; for out of 189,586 rural homes in the Southern states inspected by the Rockefeller Sanitary Commission, 95,988 were found to have no privies at all and 87,156 to have open privies which allowed wastes to spread freely through the soil. The sun is warm, and the Jones children go barefooted and contract "ground-itch." They eat strawberries and plums which have been on the ground. By the time their visit is over they have become infected with grown hookworms. Returning, they begin to pollute the soil at their home. The other members of the Jones family get the infection, and by the end of the summer they are all becoming pale and puny. The district school at A opens. The Jones children, though not in their usual health, go to school. The school has been equipped with many of the modern conveniences, but has not been provided with privies. The need of them was not really felt. The boys concealed themselves in woods and undergrowth to the east, and the girls to the west of the schoolhouse. The Jones children, not knowing they have a disease, of course, do not know they are spreading one when they use the common hiding-grounds. In ignorance of the disease and in ignorance of sanitation, which the school should be teaching in a practical way, the soil around the school becomes heavily polluted, and a center for spreading the disease from one family to another. Soon the community has hookworm disease. Sometimes every pupil in a school gets it. The people become sick, backward, lazy, poverty-stricken and "trifling"; no one seems to suspect when, how or why "hard times" overtook the community. Had there been sanitary privies in use by all the people of the district, the disease would have been limited to the two Jones children, and their infection would have been mild. This is so, because when the hookworm eggs are collected in a sanitary privy they never reach the soil where, by hatching into larvae, they can do the harm.

HOW THE DISEASE IS RECOGNIZED

Hookworm disease is recognized with certainty in two ways. If it is suspected from the clinical symptoms already described, the treatment, which is very simple and inexpensive, may be given. If the disease exists, the worms which cause it will be poisoned and dislodged by the medicine, and may be found in the stools. By washing the stools through one or two thicknesses of cheese-cloth, the worms will be left on the cloth, and may be seen and collected with ease.

The second method is the one commonly employed. Nearly a million persons have been examined in eleven Southern states by its use during the last four years. A small portion of the bowel movement is spread out thinly in water on a glass slide, and placed under a microscope. If the hookworm eggs, which are very characteristic in shape and size, are found, it is known that the hookworms are in the bowel, and that treatment for their removal should be taken. Hundreds of the best people, men, women and children in the South, are seeking examination by this method, and are putting aside all squeamishness in the determination to rid themselves and their communities of this pest.

HOW HOOKWORM DISEASE IS PREVENTED

There are two ways to get rid of hookworm disease: one is to prevent it, the other to cure it. Unfortunately as a people we are slow to apply preventive measures against disease. This means that we have too much disease, and, of course, that we rely too much on treatment. Preventive measures against hookworm disease are very simple. All that is necessary is to have the excreta of every person collected and disposed of in a way which will keep the hookworm egg from developing. If this should be done in every case, the hookworms, not multiplying in the intestine, would die in a few years of old age and the disease would become extinct.

Until this can be accomplished much infection can be prevented by wearing shoes. The barefoot boy is a great gatherer of hookworms. But the really effective protection from the disease is to be found in clean soil. That can be secured when sanitary privies are constructed and regularly used by all the people. Even if those persons now infected should refuse treatment, but could be induced or required to use sanitary privies, the country would in a few years be freed from the disease.

The common pollution of the ground about schools and farmyards must be stopped. The tumble-down shack and surface privy which allow their contents to be spread over the soil, by rains, hogs and chickens, or carried by flies to the houses, must be abolished, and replaced everywhere by the sanitary privy, the essentials of which are that it have a water-tight, fly-screened receptacle, and that the contents be disposed of in a sanitary way, by burning, fermenting, or burying away from and below the water-supply. Human excrement should not be used as a fertilizer unless thoroughly treated under competent direction; otherwise it may carry hookworms to fruit and vegetables.

An inexpensive privy which can be easily provided for the most simple farm or cottage has water-tight pails, tightly closed in, close-fitted door, and all openings covered with wire mesh to exclude flies.

Many communities are already putting in such privies, and there is a growing movement for placing them in every rural schoolyard of the South as a protection against hookworm, typhoid and other diseases.

All plans for privies approaching the ideal thus far presented seem to be too expensive or otherwise unpractical. The feeling is growing that some practical arrangement should be recommended, even though from the point of view of the idealist it is not without danger. We know that trains, automobiles and elevators are dangerous to a degree, yet no one would be so foolish as to advise that we avoid the use of these conveniences of civilization until the element of danger is absolutely eliminated. Working on this principle, sanitarians are now recommending as a minimum for a privy, first that a hole be dug in the ground; second, that a substantial box with a hole in the bottom be turned upside down over the hole in the ground and dirt banked around the lower edge of the box; third, that the hole in the box be covered when not in use; fourth, that the box be moved from time to time and the pit filled up with dirt. This privy may be built out in the bushes or it may be within expensively constructed walls. For all practical purposes an arrangement of this kind will eliminate hookworm eggs as á source of danger, and so long as it is fly-proof it will guard against the spread of typhoid fever by flies. If located a reasonable distance from the spring, or well, and below it, the danger of pollution is negligible, except perhaps in certain areas where the formation is largely limestone.

Fig. 6.—Tennessee family, all infected. All were cured with thymol. They had spent $1,500 for patent medicines.

HOW HOOKWORM DISEASE IS CURED

Hookworm disease is usually treated with Epsom salts, and with powdered thymol given in capsules. The object of the Epsom salts is to free the intestine from mucus or other substances surrounding the hookworms and protecting them from the action of the thymol. The patient should take little or no supper on the evening before the thymol is to be administered. As early at night as is convenient he should take a dose of Epsom salt. The next morning as early as the salt has acted, half the number of capsules of thymol prescribed for the whole treatment should be taken. Two hours later the remaining capsules should be taken. Two hours after the second dose of thymol, another dose of Epsom salt should be taken, which will expel the hookworms that have been forced to loosen their hold on the intestinal wall by the action of the thymol, and will also get rid of the excess of thymol before it has had time to produce any harmful effects on the patient. Nothing should be eaten on the day the capsules are taken until the final dose of Epsom salt has acted well. A little water or strong coffee, *without* milk, should alone be allowed.

As alcohol and oils dissolve thymol, making it actively poisonous to the patient, the use of them in any form would be exceedingly dangerous. Gravy, butter, milk, all alcoholic drinks and patent medicines, which generally contain alcohol, should be forbidden on the evening before and on the day of the treatment. Moreover, as many hookworm patients have dilated stomachs which do not readily empty themselves and it is important that the thymol reach the small intestine at once, the patient should lie on the right side for at least half an hour after taking each dose of thymol.

DOSE OF THYMOL

Age, Years	Grains	Grams	6 a. m.	8 a. m.
1 to 5	7.5	.5	½ dose	½ dose
5 to 10	15.	1.	½ dose	½ dose
10 to 15	30.	2.	½ dose	½ dose
15 to 20	45.	3.	½ dose	½ dose
20 to 60	60.	4.	½ dose	½ dose
60 and upward	45.	3.	½ dose	½ dose

The dose of thymol varies with the age of the patient. As the disease retards development and persons 18 years old often have only the normal growth of 13, apparent and not actual age determines the dose. A competent physician, of course, should supervise the treatment. The accepted scale of doses is shown by the accompanying table.

The thymol is powdered and given in capsules. If sugar of milk is added grain for grain, the thymol operates better.

In a majority of cases two treatments like the one just described will expel all the worms. In 1,518 out of 3,630 patients treated in Porto Rico, a single treatment effected a cure; a second treatment was sufficient in 1,166 cases; 518 required a third; 247 a fourth; 104 a fifth; 47 a sixth, and so on until the last case was freed from hookworms by the eleventh treatment. Frequently the worms not killed by the thymol are sickened to a degree that they do not deposit any eggs for approximately two weeks. By a microscopic examination, made two weeks or longer after the last treatment, it is possible to know when all of the worms are destroyed, and the treatment completed. When a microscopic examination is not possible, the feces expelled by each treatment can be examined for hookworms in the manner already described. When no more worms are seen, one extra treatment for good measure should be given.

INDUCED PNEUMOTHORAX *

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The rational basis of induced pneumothorax as a treatment for certain pulmonary diseases is the fact that clinicians have noted for many years that consumptives are often relieved and sometimes cured by the spontaneous occurrence of hydrothorax or pneumothorax. Such observations have been recorded to a considerable number, both by old and by modern observers, including Bach, Goodhart, Hall, Jochman, Pepper, Webber, West, Osler, Hamman and Sloan. The presence of even pus in the pleura — empyema — is no longer considered *per se* an indication for surgical interference. Indeed, Murphy and other surgeons counsel delay in such cases until the underlying disease of the lung has had an opportunity to profit by the rest incident to its collapse. I myself have noted the excellent results that follow delayed operation in empyema complicating tuberculosis of the lungs. In the treatment of joint tuberculosis nothing is regarded as more essential than rest; indeed, in many cases fixation alone is sufficient to procure healing. The value of rest is not a whit less important in pulmonary tuberculosis. Once this principle has been grasped, the treatment of pulmonary tuberculosis by securing organ rest through mechanical measures appears quite rational. It remains only to determine by which mechanical means this object shall be obtained.

Various mechanical methods have been devised. Several styles of roller bandages, usually designed to compress one-half of the thorax by using the opposite shoulder for counterpressure, have been offered, but have never gained wide acceptance. Adhesive straps have also been employed and are to-day the accepted method of fixation of the chest wall in fractures of the ribs and in acute pleurisy. Plaster casts, cumbersome as they are, have been fashioned, and even a curious spring clip similar in conception to the ordinary paper clip, has been tentatively offered by an Englishman, to restrict movement of half the thorax. These methods are all open to both theoretical and practical objections, and therefore have gained but little recognition. Such tinkering devices were soon cast aside as inadequate in the presence of so serious a disease as consumption, and attention was concentrated on massive surgical operations. Suffice it here to say that they are not generally resorted to as efficient cures for pulmonary tuberculosis. Their object has been either the removal of diseased tissue, a task surrounded by unusual difficulties, or fixation of the lung.

More recently attention has been directed to fixation of the lung by another method — the introduction of gases or fluids into the pleural space. On account of the well-known physical law that gases exert their pressure in all directions equally, gases have been employed almost to the exclusion of fluids.

HISTORY OF THE PROCEDURE

The first record of such a procedure is attributed to James Carson, an English physiologist, who in 1821, while experimenting on lung elasticity, inflated the pleural sac of animals and foretold the value of induced pneumothorax in the treatment of pulmonary diseases, especially tuberculosis, but did not apply it clinically. In 1882, Forlanini of Pavia, Italy, reported a number of spontaneous cures by intercurrent pneumothorax, and advised that pneumothorax be induced artificially. In 1887, Adams reported a case of hemoptysis controlled by spontaneous pneumothorax, and advised its artificial induction. In 1892, Forlanini actually began to employ artificial pneumothorax; he made his first report in 1894. By 1895 he was able to offer a cure of well-advanced pulmonary tuberculosis by this method. Meanwhile, and without knowledge of Forlanini's work, Murphy of Chicago devised and applied the same treatment in five cases, in all of which he reported improvement in 1898. In the same year Schell reported a case of hemoptysis controlled by induced pneumothorax. Murphy, being a surgeon, and not desiring to be led into the field of internal medicine, turned his work over to Lempke, who reported fifty-three cases in 1889. About seven years ago Brauer made his first report, and since then has added much to the literature.

Since the publications referred to above, a number of tuberculosis workers on the Continent, in England, and more recently in America, have adopted the procedure. The principal credit of demonstrating the value of induced pneumothorax belongs to Murphy and Forlanini, although Brauer's work did more to popularize the method.

APPARATUS

While various forms of apparatus have been devised for introducing gas into the pleura, the simplest, and I think the best, are modeled after Murphy's original form. I shall therefore present such an apparatus, which is the form I have constantly used. Figure 1 represents two graduated bottles *W* and *N*, connected by tubing so that water flows from the upper to the lower, displacing gas from the latter, and forcing it through the tubing and needle into the pleural sac. The accessories are a cotton filter, *F*, for the gas, and a manometer, *M*, for recording intrathoracic pressures. A three-way stopcock, *C*, permits one to connect the patient at will with the manometer or with the gas container, *N*. In the tube leading from *C* to the manometer, is inserted the capillary device, or link, for controlling oscillations.

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* Read before the meeting of the California State Medical Association, April 15, 1914.

GAS

Various gases have been tested out. Unverricht found experimentally that when air is injected into a dog, the oxygen content is absorbed first, then the carbon dioxid and last the nitrogen. Not only is nitrogen slowly absorbed, but it is also inert and nonirritating, and therefore well suited to pneumothorax. My work has all been done with nitrogen, sterilized by being passed through red-hot tubes, washed and warmed immediately before use by being placed in a container which has been filled with hot mercuric chlorid solution, and filtered through cotton just before passing through the needle.

NEEDLES

In many cases some difficulty is met in getting the eye of the needle into the pleural sac, which before inflation is of course not a cavity, because the two pleurae cling together both by virtue of the vacuum in the sac, and by capillary attraction. The adhesion is such that even when the parietal pleura is cut, the lung does not immediately collapse. The layers still cling together even in the presence of atmospheric pressure. It is readily understood, therefore, that a dull instrument is more serviceable for finding the sac, as it is more likely to push the visceral pleura before it than to penetrate into the lung.

Manual dexterity and experience are here of great value. The experienced hand judges by the feeling what tissue the needle is penetrating. An educated tactile sense distinguishes with considerable certainty the feeling due to passage through the fascia, the resistance of the pleura and the feeling when the needle is embedded in the lung.

After the sac has once been inflated, subsequent punctures are easily made with a sharp needle, provided the gas has not been absorbed. It is injection of the empty sac that is difficult. A form of dull needle that has been serviceable in my hands is the Bauer needle modified by Floyd (*B*, Fig. 1). It has the advantages of an attached obturator for clearing the lumen, and a separate branch for the tube leading to the controller. Although the dull needle has its advantages, experience makes it easy to find the sac with a sharp needle. In my inflations, numbering over 614, I have used a sharp needle far oftener, even for first inflations.

MANOMETER

The heart of the apparatus is the manometer. When properly observed and followed, the readings of this instrument render the operation safe from accident. It serves two main purposes: when the needle has been introduced properly so that its lumen lies in the sac, the manometer announces the fact by free oscillations and a sustained negative pressure. To proceed without this information is to invite disaster. The second purpose served by the manometer is to indicate intrathoracic pressures, thus serving as the indicator and guide during the operation.

The manometer (*M*, Fig. 1) consists simply of a glass U-tube graduated in centimeters and filled with a fluid, usually water. Thoracic pressures are transmitted through the tube *X* (Fig. 1), and depress or suck up the fluid according to whether the pressure is positive or negative. Inasmuch as the patient continues to breathe, the pressure varies constantly, and therefore the columns of fluid are in constant oscillation. Inasmuch as not all operators are reading the manometer the same way, it may not be amiss to refer to this point.[1] Physics made clear long ago that pressure is measured by the column of fluid supported. Now the column supported is that portion of the longer column above the shorter. But as the columns are oscillating, one may record the maximum length of the column or its minimum length. But what is better than either, because it varies less, is the mean pressure. To secure uniformity and simplicity, it is here suggested that mean pressures be the figures recorded.

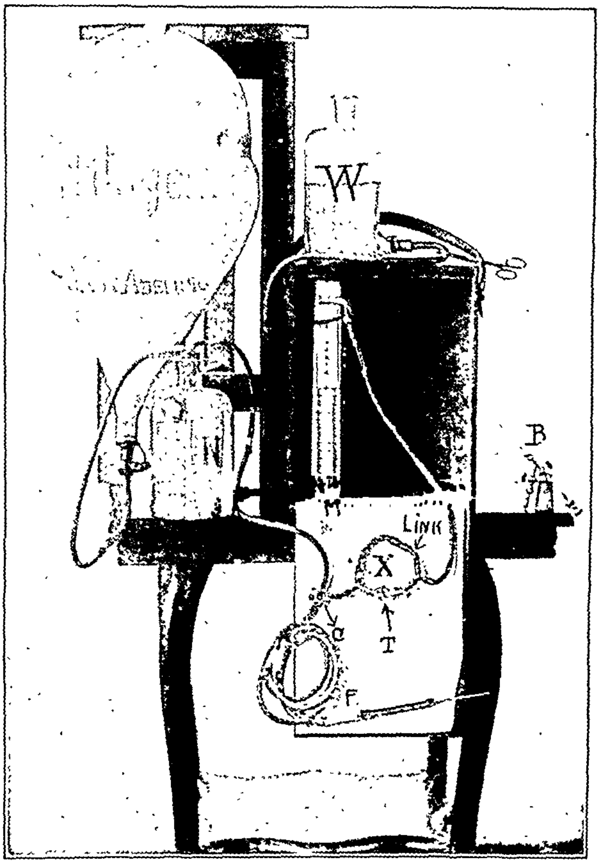

Fig. 1.—Portable apparatus; *W*, water-bottle; *N*, nitrogen bottle; *M*, Manometer; *c*, three-way stop-cock; *F*, filter; *B*, Floyd needle; *X*, tube leading from *c* to *M*, divided into two portions, on one of which is inserted the "link," the other branch furnished with a pinch-cock, *T*. The whole apparatus except the bag of gas is carried in the small box.

Fortunately, by employing a simple attachment,[2] shown in Figure 2, mean pressures can be read directly, that is, free from oscillations. Thus a positive-reading manometer for mean pressures is readily available. The attachment consists of a capillary tube fixed in a larger tube (for protection) or any similar device that forces registration through a minute opening, *C*. This device is placed in one limb of the divided tube leading to the manometer (Fig. 1). When the rubber tube, *T*, is pinched off, forcing all pressures to reach the manometer through the link, mean pressures will be recorded with no oscillations. But, as all workers know, the oscillations are necessary for several purposes, and are indispensable to prove the position of the needle — to show when it is in the pleural sac. If the tube, *T*, is left open, oscillations occur as usual. Thus both uses of the manometer are readily available.

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[1] Von Adelung, Edward: Interstate Med. Jour., 1913, xx, No. 11.

[2] Von Adelung, Edward: The Pneumothorax Manometer, THE JOURNAL A. M. A., Sept. 6, 1913, p. 771.

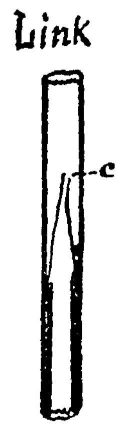

Fig. 2. — Capillary opening in small tube sealed into larger tube.

The advantages of this link are (1) ease of reading; (2) uniformity of records; (3) protection of manometer against overflow when patients cough, and (4) greater accuracy, inasmuch as the mean pressure varies less than either maximum or minimum, namely, than either the expiratory or inspiratory pressures.

When the language of the manometer has been mastered the following information is available from its readings:[3]

1. When the needle is in the pleural space, a negative mean pressure with free oscillations is recorded.
2. When the needle is in the air-space of the lung, free oscillations occur that are equally above and below the zero point.
3. It indicates the size of the pleural space; a free pleura requires many hundred cubic centimeters of gas before the pressure becomes positive. If a few hundred cubic centimeters of gas produce a positive pressure, it indicates a small pleural space.
4. If the needle is embedded in adhesions or if it is extrapleural, no oscillations will occur.
5. The readings indicate the absorptive power of the pleura by the amount of gas that must be injected to regain the terminal pressure of the previous inflation.
6. It indicates the degree of elasticity of the compressed lung: during subsequent filling, if the pressure rises very gradually on introducing 100 c.c. at a time it indicates that the lung had expanded with the diminished pleural pressure. Had the lung remained collapsed, there would have been but slight rise of pressure until after considerable gas had been refilled.
7. A slow increase in pressure with wide oscillations indicates an elastic mediastinum, while the reverse indicates a rigid mediastinum.
8. Rarely, the rupture of adhesions during inflation is indicated by sudden fall of pressure, or still more rarely, rupture of the lung or of the mediastinum.
9. Occasionally, reversed oscillations occur—that is, a higher pressure with inspiration than with expiration. This is due to paradoxical diaphragm movements.
10. If, when the patient takes a deep breath or coughs, the column is moved several degrees but fails to oscillate, it is an almost certain sign that the apparatus is obstructed — usually in the needle.

TECHNIC

As far as the operation is concerned, the main difficulty is the entry of the empty pleural sac, which is frequently obliterated by adhesive pleurisy. And even if it is patent and normal, it is a mere line between two serous layers in apposition. Two procedures are recognized: (1) the Brauer, or open method, which consists of exposing the parietal pleura by incision, and dissection, and the introduction of a catheter between the two pleurae, under guidance of the operator's eye, and (2) the Forlanini method, or blind operation, which consists simply of passing a hollow needle through the chest wall into the pleural sac, the operator being guided by the sense of touch and the manometer.

American operators prefer the Forlanini method. I have not used the Brauer incision, though I have no doubt that it might succeed when the puncture method fails. The objections to it are that it consumes time and requires incision, dissection, suturing, careful asepsis and dressings. Furthermore, it is more likely than is the blind method to be followed by subcutaneous emphysema. Finally, more patients object to cutting than to the needle.

In contrast, Forlanini's puncture is simple, safe in careful hands and successful in nearly an equal number of cases. If an adherent pleura is encountered, subsequent attempts in new sites means simply painless needle-punctures instead of incision operations. No dressing is needed after the puncture, and less fear is engendered than by the knife.

AUTHOR'S TECHNIC

Information gained from roentgenoscopy, from physical signs and from the patient's statement which side was first affected, guides me in selecting the worse side for operation. The patient usually lies down. The exact site is chosen by finding a place that is resonant, yields breath-sounds and is away from important organs. It is impossible, however, to foretell the presence of adhesions. The chosen spot is sterilized with tincture of iodin, and then a few drops of novocain in epinephrin are slowly injected, first intracutaneously, then subcutaneously, intramuscularly and finally into the pleura. If the dull needle is to be used, the skin is first punctured with a sharp instrument. If the pleura already contains gas, a sharp, short aspirating needle, with obturator, is pushed directly into the pleural sac. If, however, it is a first injection, I use either a Floyd needle, or preferably the sharp needle, pushing it very slowly through the skin, muscles, fascia and finally through the parietal pleura, judging of its location largely by tactile sense, but always depending on the manometer. When the manometer records a negative mean pressure with free

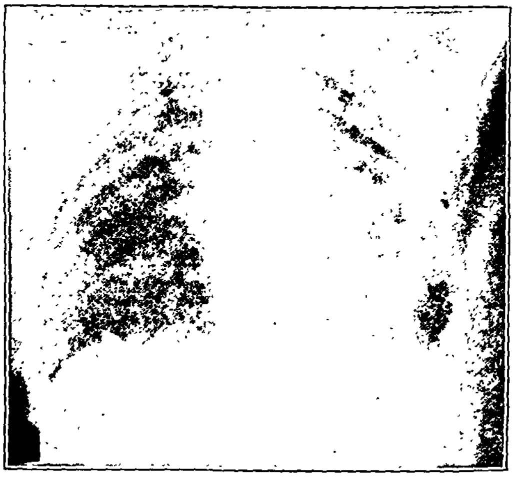

Fig. 3.—Case 553, W. Before treatment.

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[3] Adapted from Hamman and Sloan: Johns Hopkins Hosp. Bull., 1913, xxiv, No. 264.

oscillations I know that the needle is properly placed. After noting the initial mean pressure, I inject gas slowly to a variable amount, usually not more than 200 or 300 c.c.

The terminal mean pressure is then recorded and the needle withdrawn. Should it happen that too much gas is introduced, the removal of the surplus is a very simple matter, requiring only that one reverse the position of the bottles (*W* and *N*, Fig. 1). No dressing is applied. As soon as the needle has been properly placed, the manometer becomes the guide and is consulted frequently during the introduction of the gas. Injections are repeated as frequently as needed, depending on the rapidity of absorption, every two or three days up to once a month, the object being to maintain collapse of the lung. At first the intrapleural negative pressure, usually from 2 to 10 cm. water, is reduced to 3 or 5 cm. negative mean pressure. Only after several treatments is a neutral or a positive pressure produced, thus allowing time for thoracic organs to accommodate themselves to the new pressure and to their inevitable displacement, and to allow the other lung to prepare to compensate.

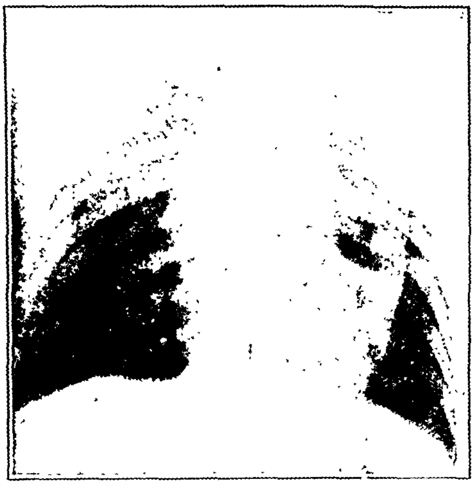

Fig. 4.—Case 517, W. Adhesions allow only small pneumothorax, yet good results followed.

When a positive mean pressure has been attained, I take the second roentgenogram as a record, to indicate the size and shape of the pneumothorax. Other roentgenograms are taken when needed for information. The lung is kept collapsed for many months — a year, or even longer in some cases. Brauer fixes the period at from one to two years, but says that he has seen good results in six months. Improvement, however, not infrequently sets in shortly after the beginning of treatment. When the treatment is discontinued, the lung usually expands and functionates again as well as the fibrosis of the healed parts can be expected to allow.

In some bilateral cases, after compressing one side for several months, I have allowed the lung to reexpand, and have then treated the opposite lung in the same way. Recently, in a few desperate cases of bilateral infection, I have done a partial inflation of the two sides *simultaneously*, the result thus far being apparently beneficial.

PATHOLOGY

The pathologic changes found after continued compression of the lung indicate the value of the procedure. According to Forlanini, Saugman, Graetz, Warnecke and Kistler, the most striking changes resulting from compression are the following: There is marked fibrous formation and no evidence of advancing disease; old caseous areas are surrounded by dense fibrous tissue; the alveolar epithelium is transformed into the cuboidal or columnar type; the lymphatics are dilated and richly pigmented, a condition indicating marked stasis in the lymphatics; the circulation of blood is likewise altered. In spite of long-standing atelectasis, the alveolar walls, though pressed together, do not adhere. That the process in the other lung may also be arrested, although doing the work of two, is vouched for by nearly all observers — Hamman and Floyd, Brauer, Spengler, Forlanini and many others.

The immediate results of pneumothorax are often unfavorable: the cough increases, the sputum augments, the toxemia increases as evidenced by rise in temperature and pulse, dyspnea grows worse, and the patient loses in weight and appetite. After a few weeks, however, the benefits become apparent. The collapse of the lung has secured physiologic rest, and the walls of cavities are approximated, thus aiding their healing and abolishing hemorrhages. The lung contents — air, pus, secretions and detritus, with their rich bacterial flora — are mechanically expelled, reducing or abolishing cough and sputum; the lymphatics and blood-vessels are compressed, inhibiting the spread of the infective germs and of their toxins, often rendering the sputum clear of tubercle bacilli and elastic fibers, reducing or abolishing fever and sweats, and permitting the appetite to return, the weight to increase, the pulse to drop to normal, cyanosis to disappear and the opsonic index to rise. The opposite lung enlarges to compensate for the defunctionated lung area, and in favorable cases general clinical improvement follows, as expressed by a sense of well-being, and increased weight, strength and energy.

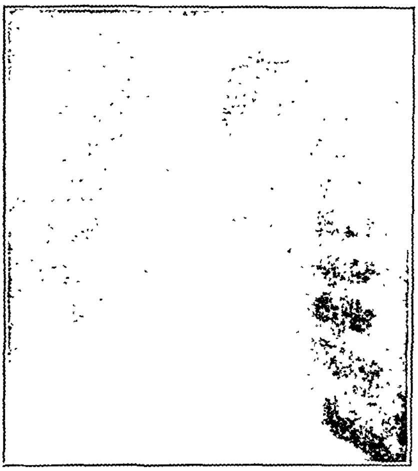

Fig. 5.—Case 523, Ch. Incomplete left pneumothorax; large cavity; diaphragm adhesion; fibrosed upper lung; result excellent.

ACCIDENTS

I have now to refer to some accidents that may befall in artificial pneumothorax, and to indicate how they are to be avoided. Pain from the needle can be entirely avoided by careful local anesthesia as previously described; but pain occurring during or after an injection, probably because of tension on pleuritic adhesions or to displacement of organs, is often unavoidable. It is rarely of long duration, and is best minimized by gradual attainment of the desired pressure.

Subcutaneous emphysema results from inducing considerable positive pressure, or from coughing, straining, etc., and is due to leakage from the pleura back through the puncture into the tissues. It is more common after the Brauer incision than after the Forlanini puncture, but will ensue after either if much positive pressure is induced. Strapping a hard pad over the puncture will often prevent the return of gas. Digital pressure continued for from ten to thirty minutes is entirely successful. A spring pad like a hernia truss is useful. When subcutaneous emphysema invades the neck and face, it becomes distressing, but is never a danger.

Bleeding from the opposite lung, in bilateral cases, due probably to compensatory stretching of the lung, is usually regarded as a rare accident. It occurred in two of my cases.

Puncture of the lung is to be avoided, though it commonly causes no difficulty. It is easily conceivable that the pleura might be infected by wounding the diseased lung, but most observers do not find that serious results follow this accident. Hamman and Sloan state that "simple puncture of the lung with an aspirating needle, even when the lung is diseased, is associated with little danger." My experience leads me to believe that lung wounds from punctures are rarely followed by more than temporary pleuritic pain, or by bloody sputum.

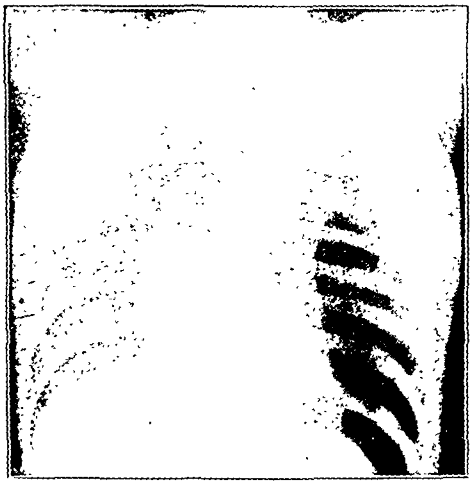

Fig. 6.—Case 508, O. Almost complete left pneumothorax; adhesions at apex, diaphragm and third rib; result excellent.

But the pleura can doubtless be infected by an unclean needle or other surgical septic error. No operator can afford to neglect strict asepsis in this operation, especially as it is stated that 50 per cent. of pneumothorax cases develop pleuritic effusion. I think this figure may be too high. In a series of forty-two cases with 614 punctures, I encountered a pleuritic effusion consequent to pneumothorax only six times. Effusions are nearly always reabsorbed after a time, and are not a hindrance to lung healing.

Displacement of the heart and aorta and mediastinum naturally occurs to some degree with inflation of one pleural sac. In most cases no distress results, but untoward symptoms have been attributed to this anatomic cause. Distress from this cause is to be avoided by inducing the complete compression gradually, so as to allow the organs time to adjust themselves to new conditions, and also by avoiding high pressures. In my experience a positive mean pressure of over 5 c.c. is likely to cause some disturbance in bilateral cases. Higher pressures are liable to cause subcutaneous emphysema and distress.

Dyspnea is liable to appear in all cases after the early inflations; it is not usually serious, and is always slight with low pressures. It is rapidly relieved by absorption of gas, and later by compensatory functioning of the opposite lung, or by adjustment of the circulatory organs. It is noteworthy that dyspnea need not follow an inflation until an hour or more later. Its appearance is frequently delayed and often manifest only during exertion. In certain unsuitable cases, or when high pressures are used, dyspnea may become an important complication. The interesting question of the least lung capacity compatible with life has been investigated by Le Play and Mantoux, who report that whereas Courmont destroyed, surgically, three quarters of the lungs of animals without death, they were able, by induced pneumothorax, to render atelectatic all but one-sixth of the lungs of a dog without killing him. The physiologic adjustment of the lungs is possible therefore within wide limits.

PLEURAL REFLEX AND GAS EMBOLISM

There now remain to be discussed two accidents, the most important of all; pleural reflex and gas embolism. All authorities mention these as the most dangerous of the accidents. Fortunately, only a few deaths have been reported. Forlanini reported 1,454 inflations with four pleural reflexes, only one of which was serious. In another series of 500 inflations there were three fatalities. Saugman reported 970 with no pleural reflexes; this he attributed to avoidance of high pressures. The distinction between the two accidents is not clear. Some authors hold that pleural reflex is nothing but air embolism. The usual post-mortem examination fails to show air in the blood-vessels, even when it is known to have entered. So Brauer resorted to an examination of the brain under water, by which expedient he demonstrated bubbles in the blood-vessels. Clinically, pleural réflex and gas embolism yield the same syndrome: fainting, pallor, convulsions and perhaps temporary or permanent paralysis (usually hemiplegia) and occasionally death. Indeed, while Forlanini regards "pleural reflex" or "pleural shock" or "pleural eclampsia" as a distinct entity, and though animal experimentation is said to confirm the possibility of such a reflex syndrome, still Sampson and Brauer attribute the syndrome to air embolism in all cases, and declare that it is entirely avoided by the open method of operating. Saugman states that gas embolism does not occur unless the amount of gas introduced into the blood exceeds 20 or 30 c.c. In over 614 injections, I have not yet had such an accident, though I have seen the syndrome in a dog. There are four principal ways to avoid this serious accident:

1. A preliminary hypodermic injection of morphin is recommended as a preventive, but is objectionable for obvious reasons.
2. The Brauer incision, which enables the operator to see where the instrument delivers the gas, is urged as a preventive.

3. Saugman and some others aspirate before turning on the gas to see whether or not the needle is in a blood-vessel.

4. It has also been recommended that one first inject saline solution or oxygen until satisfied that the needle is not in a blood-vessel. My conviction is that air embolism and real pleural reflex, such as results experimentally from the injection of irritating fluids into the sac, are both to be avoided by using warm, moist nitrogen, careful local anesthesia of the pleura and proper observation of the manometer. Not until the latter records free oscillations with persistent negative mean pressure can one feel sure that gas may be introduced safely, unless one is using the open method.

INDICATIONS AND CONTRA-INDICATIONS

If one seeks a consensus of opinion on the cases which are appropriate for induced pneumothorax, he will soon see that a great difference of opinion prevails. Practically all observers agree that we have in pneumothorax an excellent means of controlling hemoptysis. In the few cases of hemoptysis that I have treated by this method, the result has been immediate success.

The presence of fever, even high, is not a contra-indication for induced pneumothorax. On the contrary, the temperature frequently drops under this treatment with surprising promptness.

The presence of fluid in the sac must be regarded as Nature's effort tending toward the same end as pneumothorax, namely, to secure lung rest, and is therefore to be removed only when symptoms demand intervention. On the other hand, a small effusion may be augmented by adding gas, thus inducing more complete lung rest.

Pleuritic adhesions, if extensive, constitute a mechanical barrier of a serious kind. Extensive adhesions prevent lung collapse and render pneumothorax impossible. If only partial, they may sometimes be broken down by gas pressure, carefully applied, or perhaps sufficient free pleura may exist to allow of a therapeutic result.

All writers agree that laryngeal tuberculosis is not a bar to the treatment. The larynx usually improves as the lung improves, but tuberculous infection of the bowels is a grave complication. Nevertheless, some report improvement even in these cases.

If the patient is already dyspneic, pneumothorax is *a priori* irrational, unless the dyspnea is attributable to the toxin and not to the limited lung area. Generally, such cases are unfavorable.

Miliary tuberculosis is regarded as a contra-indication, and so are serious cardiac disorders and marked splanchnoptosis.

The main discussion has centered on the question of how early in the course of pulmonary tuberculosis the patient should begin this treatment. While at present most writers agree that the best results are to be expected in unilateral cases, still they are not willing to restrict its application to this class of cases, nor are they willing to recommend its use in the early stages. It is therefore reserved for moderately advanced unilateral cases, and for some bilateral cases. Still I note that there is a growing tendency to extend the treatment to earlier cases, and to grant what alleviation it may offer even to those in the last stages. Some surprising results have been recorded in this class, usually considered as hopeless; but before expressing myself on these points let me quote a few authors on the indications and contra-indications.

Forlanini regards as favorable the uncomplicated unilateral cases free from pleural adhesions (unless these can be cleared by gas pressure) running a slow or subacute course, and provided the lesions are not far advanced. Claude Lillington admits cases of extensive and acute disease if unilateral, or nearly so; but he also finds that some cases with extensive bilateral disease are benefited. Klemperer says to try medical treatment first, but not to wait too long. He confirms the indication in unilateral cases, and thinks that the best results are in moderately severe cases, but in a comparatively early stage. Still he advocates the procedure in all cases with continuous fever and much expectoration, when the condition is not too desperate. Herbert Rhodes recognizes its value in recurrent hemoptysis, in unilateral cases and in some bilateral cases. Volhard endorses the suitability of unilateral cases even though involving the whole lung. He also endorses the treatment in bronchiectasis, but finds abscess and miliary disease contra-indications. Robinson and Floyd say: "Certainly the unilateral cases are the best adapted and promise the best results; but many of the good results reported by Brauer and Spengler in their series of 102 cases have occurred in bilateral cases. None of our own group were strictly of unilateral involvement, and yet the progress of six cases is most promising." Shortle reports much improvement in fourteen out of twenty-two cases, although all the patients were advanced in disease.

From the evidence thus far adduced, it seems to me that authorities disagree widely. If one decides to require prolonged medical treatment in early cases before resorting to pneumothorax — if the early cases are to be refused — then it seems to me that the treatment will be restricted almost entirely to progressed bilateral cases. For I have yet to see my first case of extensive unilateral disease without demonstrable infection of the opposite side. I believe that in the selection of cases, their classification into early or moderate or advanced is not of so much importance as is *individualization*. Some cases in each class are suitable for pneumothorax, and some in each class should be refused. To my mind, experience has already demonstrated this. On the other hand, if the theoretical explanation of the *modus curandi* of pneumothorax is correct (and I believe that it is correct), and if in this procedure we are following in Nature's own footsteps, securing physiologic rest in a disease in which the value of rest is amply demonstrated, and if we are squeezing infective material from the lung, encouraging fibrosis, discouraging hemorrhage, lessening toxemia and ridding the sputum of tubercle bacilli (all of which seems to be proved), then one queries why this treatment is not applicable to the early cases. The only reply is that a large proportion of early cases are curable by other means. But it seems to me that when we find ourselves face to face with a disease as serious as pulmonary tuberculosis, even though in an early stage, we should consider well before refusing pneumothorax, a treatment that has arisen from observation of Nature's cures, a treatment based on a rational theory, a treatment that offers a resultant lung pathology that proves its value, and a treatment that has yielded 22 per cent. clinical cures when limited to advanced cases.

After having come to this conclusion I was much interested to read what Murphy, the American discoverer of induced pneumothorax, wrote. He stated that it was especially applicable to "apical or monolobar tuberculosis in the early stage, as the pathologic conditions are such that the compression of the lung can be accomplished and adhesions are not likely to be found. I do not consider," he continues, "that it is indicated or practical in advanced or chronic tuberculosis, as the fibrous tissue deposited in the lung will not permit compression of the lung, nor will the pleuritic adhesions allow of gas introduction." In a more recent article Murphy has reiterated these early views.

As a matter of fact, practically only well-progressed cases have been treated by this method, although they offer the least promise. All my cases were advanced in disease. Before stating my results I will quote a few reports of other workers in this field:

Walker and Soltau reported 13 cases, in all of which there was improvement. Zubini reported favorable results in a series of 43 cases. Murphy reported 5 cases, all improved. Many of Lempke's patients were greatly improved and some cured. Robinson and Floyd reported 25 cases all improved. Lapham reported 31 cases, 68 per cent. arrested, 2 cured. Brauer reported 102 cases, 22 per cent. cured.

Murphy stated recently that from a study of 500 collected cases with 2,500 injections, he concludes that artificial pneumothorax should always be made in every case of pulmonary tuberculosis in which there is no absolute contra-indication. I have no hesitancy in concluding that when properly performed, with careful technic, by one who is experienced, the procedure is quite safe and practically painless. When not curative it is very often alleviative, affording an otherwise hopeless case a new chance for arresting the disease.

My experience is limited to forty-two cases, all but one bilateral and well advanced. All but one were ambulant, the patients coming to the office for treatments.

Of the forty-two cases, it is noteworthy that pleuritic adhesions prohibited pneumothorax in only five.

The total number of punctures done was over 614, and no gas embolism occurred; but pleuritic effusion supervened in six cases, one being purulent.

Twenty-two patients gained weight and eleven lost weight, this observation being unrecorded in four cases.

In the thirty-seven cases in which a pneumothorax, even though small, was possible, twenty-eight patients were improved in varying degrees, one was arrested (perhaps cured) and ten remain unimproved.

Oakland Bank of Savings Building.

Wages and Hygienic Living.—Regular employment at wages sufficient to meet the cost of hygienic living is the sine qua non of all the requirements. It does not take an expert in disease prevention to tell us that an underfed, poorly clothed, poorly housed group of people are going to prove easy prey to the germs of influenza, pneumonia, tuberculosis and similar diseases. Neither does it take a deep and prolonged study of wages, cost of living and housing conditions of the working people of the United States for us to know that a large percentage of them are living on a scale greatly below a hygienic minimum.—B. S. Warren in *Pub. Health Rep.*

THE GERMICIDAL ACTIVITY OF CALOMEL *

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While conducting investigations concerning the germicidal activity of chrysarobin and other substances used in the treatment of psoriasis, we were required to devise a technic suitable for testing substances which are insoluble in water. All of the methods generally employed in testing germicides require that the substance be soluble in water, weak alcohol, weak alkaline solutions, etc., which in themselves have little or no germicidal activity.

Since calomel is practically insoluble in water we have selected it as a control and have determined its germicidal activity on ordinary test micro-organisms.

After considerable experimentation, we have during the past year worked out a technic for determining the germicidal activity of insoluble substances which is very simple and yields surprisingly uniform results. It is not so perfect as the Rideal-Walker or Hygienic Laboratory methods for testing soluble substances, and it does not attempt to distinguish between antiseptic action and germicidal power; but for insoluble substances it has yielded us fairly good results.

Early in the work we were surprised to find that calomel had a germicidal activity equal to that of mercuric chlorid, and further studies have shown that several other insoluble salts of mercury have similar germicidal values.

In this note we wish to present the results of these studies with various mercurial salts, together with a brief description of the technic, a fuller account being given in another paper.

TECHNIC

A difficulty in working with substances insoluble in water is the preparation of a suspension such as will remain uniform for at least an hour or until all manipulations have been finished. We have found a sterilized 2 per cent. solution of acacia in water to answer this purpose most satisfactorily; the substance to be tested is accurately weighed and placed in a sterile flask containing a layer of small glass beads, the required amount of acacia solution being added and a suspension secured by agitating or shaking the flask for several minutes. All measurements of the suspension are made with sterile graduated 1-c.c. pipets. When working with calomel we have found that very little adheres to the sides of the pipet; but with chrysarobin and similar powders, it may be necessary to wash out the pipet once or twice with either sterile bouillon or normal saline solution.

During the time necessary for measuring varying quantities of the suspension, the flask should be occasionally shaken in order to keep the contents uniformly suspended.

We have used various test micro-organisms; since the primary object of our work was concerned with chrysarobin and its action on the skin, we have usually worked with cultures of staphylococci; however, a culture either of *Staphylococcus aureus* or *Bacillus*

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* From the Pathological Laboratory of the Dermatological Research Department, Philadelphia Polyclinic and College for Graduates in Medicine.

typhosus may be used. The test micro-organism is cultivated in neutral bouillon for twenty-four hours at 37 C. (98.6 F.), filtered to remove clumps, and used in a constant dose of 0.1 c.c. as delivered by an accurately graduated 1 c.c. pipet.

Both plain neutral bouillon or plain neutral agar may be used for the seed medium. Best and most uniform results were secured with the former. Each tube contains exactly 10 c.c. of the medium.

The technic is very simple. In the *plate method,* increasing amounts of the suspension as, 0.05, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9 and 1 c.c. are pipetted into a series of twelve sterile Petri dishes; 0.1 c.c. of a twenty-four-hour bouillon culture of the test organism is added, followed by 10 c.c. of melted agar cooled to 40 c.c. The whole is thoroughly mixed. The twelfth plate receives culture and agar and serves as the culture control.

At the end of twenty-four hours the plates are inspected. The control usually shows so many colonies that it is impossible or inaccurate to count them. When germicidal activity is manifest there occurs a numerical decrease in colonies easily determined by counting.

By use of a 4-mm. loopful of bouillon culture in each plate the number of colonies is much reduced and accurate counting facilitated, especially in those plates which show germicidal activity of the substance being tested.

When working with large doses of a light powder it is impossible to determine by mere inspection of the plate whether or not germicidal action is manifest. In such instances, or when in doubt, we have cut out a block of agar with a stout platinum loop from the center of each dish and macerated this on a slant of neutral agar; the final result of the test is therefore delayed another twenty-four hours.

Better, sharper and more definite results are secured when the tests are conducted with a fluid medium. To a series of twelve tubes, each containing 10 c.c. of plain neutral bouillon, increasing amounts of the suspension of substance as given above are added; after each addition the pipet may be washed out once or twice by drawing up and expelling bouillon; to each tube there is added 0.1 c.c. of the test culture; the twelfth tube is the culture control and should never be omitted. The tubes are incubated for twenty-four hours, when the results are read. One is surprised with the regularity and sharpness of the results; even with slight differences in the dose of germicidal substances the tubes either do or do not show uniform clouding due to bacterial growth.

Of course in either method the culture controls must show good growths, as they usually do when working with *B. typhosus* or *Staphylococcus aureus.*

In this method the final dilutions vary when increasing doses of suspension are added to constant amounts of bouillon. We placed the desired amounts of suspension in a series of twelve dry sterilized tubes and pipetted in increasing amounts of sterile bouillon to make the total volume in each tube the same and equal to 10 c.c., but the results were practically the same when tried out parallel with the simpler procedure described above.

With the bouillon-tube method the results with the same substance from day to day are remarkably constant.

We have adopted calomel as a standard and have been able to express the relative values of other substances in comparison.

In the Hygienic Laboratory method of testing germicides the test organism is exposed to the action of the germicide for varying intervals of time as 2½, 5, 7½, 10, 12½ and 15 minutes, after which a loopful of micro-organisms and germicidal solution are removed and planted in bouillon. One loopful is, therefore, so highly diluted in the seed bouillon that any question of continued germicidal activity can practically be ruled out, unless the solution is highly concentrated. In our method it is not a simple matter to remove the germicidal substance and separate the test micro-organism. We have done so by different filters, but the technic is not uniform or practical. The micro-organism is continuously exposed to the germicide and in this manner we are unable to differentiate between antiseptic and germicidal action, for a substance may inhibit the growth of a micro-organism without necessarily killing it. As we have shown in our complete paper, this question of length of exposure is quite important. For example, 0.005 gm. of sodium arsenate inhibits the growth of staphylococci according to our method, whereas this salt shows no inhibiting or germicidal action by the Hygienic Laboratory method even in concentrated solution (1:5) after the maximum exposure of 15 minutes.

Throughout the remainder of this communication we speak of the "germicidal" activity of various substances; with calomel we have demonstrated that this terminology is correct; with many other substances, however, we have not so far attempted to differentiate between their antiseptic and germicidal power.

CALOMEL

We were surprised to find that calomel has a germicidal activity equal to that of mercuric chlorid. Naturally our first thought was that the preparation we were using (Merck's) might have contained traces of mercuric chlorid responsible for this result. But chemical tests for mercuric chlorid in heavy suspensions of calomel before and after filtration through Berkefeld filters did not show the presence of this substance. Likewise it was considered possible that hot agar or some chemical in the culture-medium might have rendered the calomel soluble or have changed it to a soluble salt; but careful and repeated experiments have shown that this does not occur. Furthermore, after a calomel suspension has been shaken mechanically for an hour at 42 C. (107.6 F.) and is filtered through a Berkefeld filter, the filtrate does not possess germicidal activity.

TABLE 1.—GERMICIDAL POWER OF CALOMEL

Calomel Suspension c.c	Equivalent in Weight gm	24-Hour Bouillon Culture of Staph. Aur. c.c.	Sterile Bouillon c.c.	Results after 24 Hours at 37 C.
0.05	0.000005	0.1	10	+
0.1	0.00001	0.1	10	+
0.2	0.00002	0.1	10	+
0.3	0.00003	0.1	10	+
0.4	0.00004	0.1	10	+
0.5	0.00005	0.1	10	—
0.6	0.00006	0.1	10	—
0.7	0.00007	0.1	10	—
0.8	0.00008	0.1	10	—
0.9	0.00009	0.1	10	—
1.0	0.0001	0.1	10	—

Table 1, one of many similar experiments, shows the remarkable germicidal power of calomel on *Staphylococcus aureus.*

Ten mg. of calomel were suspended in 100 c.c. of acacia solution. Each cubic centimeter contains, therefore, 0.0001 gm., or 1/600 grain.

It will be observed that 0.05 mg. (0.00005 gm.) or 1/1200 of a grain of calomel is capable of sterilizing 0.1 c.c. of staphylococci in 10 c.c. of bouillon.

A similar effect was noted with cultures of *B. typhosus* and *B. coli;* 0.1 c.c. of anthrax culture required at least 0.004 grain of calomel to bring about their destruction.

We have no explanation to offer of the mechanism of so high a germicidal activity of a substance insoluble in water. On first thought it would be supposed that each particle of germicide must come in actual contact with each bacterium; but this explanation can hardly hold when 0.00005 gm. of calomel spread out in 10 c.c. of agar in a Petri dish or in bouillon completely inhibits or kills the cocci contained in 0.1 c.c. of a twenty-four-hour bouillon culture.

OTHER MERCURIAL SALTS

An application of the same method to a study of the germicidal activity of other salts of mercury such as ammoniated mercury, red and yellow oxids, red and yellow iodids, etc., has shown them to possess a germicidal activity equal to calomel and mercuric chlorid.

Table 2 is included to show the comparative values of these mercurials and other soluble and insoluble substances, as determined by us. The figures refer to the smallest amount of substance required to inhibit the growth of 0.1 c.c. *Staphylococcus aureus.*

TABLE 2.—GERMICIDAL DOSES OF VARIOUS SUBSTANCES*

Substance	Amount in Grams	
	Bouillon	Agar
Yellow iodid Hg	.00004	.00004
Calomel	.00005	.00005
Red iodid Hg	.00005	.00004
Red oxid Hg	.00005	.00004
Mercuric chlorid	.00005	.00004
Yellow oxid Hg	.00006	.00004
Salicylate Hg	.0005	.0005
Ammoniated Hg	.00006	.00004
Liquor formaldehydi	.0005‡	.0008‡
Pyrogallol	.002	.002
Potassium arsenite	.002	.002
Sodium arsenate	.005	.008
Arsenic iodid	.01	.01
Phenol (carbolic acid)	.013	.02
Boric acid	.04	.04
Gray powder	.05	.05
Thymol iodid	.05	.08
Iodoform	0†	0
Sulphur	0	0
Acetanilid	0	0
Zinc oxid	0	0
Chrysarobin	0	0

* One-tenth c.c. of twenty-four-hour-bouillon culture of *Staphylococcus aureus.*

† Not germicidal in maximum dose of 0.12 gm.

‡ Cubic centimeters.

It will be noted that most of the mercurial salts have a constant germicidal activity which is practically equal to that of mercuric chlorid. Taking calomel as a standard, the efficiency of other insoluble substances is readily expressed as the "calomel coefficient."

From a number of fragmentary reports given us by various clinicians who have at our suggestion used calomel suspensions in the treatment of various suppurations, we would suggest the use of calomel suspended in sterile acacia solution in the treatment of cystitis and pyelitis, and in suppuration of joints and sinuses. We would tentatively suggest a dosage of calomel of from 1/10 to 1 grain to the ounce in 2 per cent. acacia solution.

The one main difficulty in the therapeutic use of calomel suspension in acacia-water is the fact that sedimentation begins within from half an hour to an hour. If, however, the suspension is prepared in a bottle it may be readily shaken just before use and permits being injected into the bladder, accessory sinuses, etc.

CONCLUSIONS

1. The method herein proposed for testing the germicidal activity of substances insoluble in water is very simple and yields constant and reliable results; it offers a means of determining comparative values with calomel as a standard, the result being expressed as the "calomel coefficient."
2. Despite the insolubility and relative non-toxicity of calomel, its germicidal power, weight for weight, equals that of mercuric chlorid. Certain other mercurial salts are equally germicidal.
3. Suspensions of calomel offer considerable hope of various cavities.

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SPONTANEOUS RUPTURE OF THE HEALTHY ESOPHAGUS

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Because of the interest stimulated by the observation of a case and the apparent rarity of this condition, I have reviewed the literature on this subject.

Spontaneous rupture of the healthy esophagus should include those cases of rupture *per se,* and exclude those in which the rupture has been due to trauma either from within or without, and also cases of perforation, the result of chronic peptic ulcer diverticulum, tuberculosis, syphilis, cancer and aneurysm. In selecting cases one must also reject those in which there has possibly been post-mortem digestion of tissue and those cases of esophagomalacia. Failure to eliminate such may lead to erroneous conception of the disease. For this reason I have not included the cases reported by Colegrove,[1] Heyfelder,[2] Guersent,[3] Lomax,[4] Oppolzer,[5] Howse,[6] Boyd,[7] West and Andrews,[8] and Bailey.[9]

ETIOLOGY

The disease is most frequently seen in men who are addicted to alcohol. How much influence the latter has on the condition has never been determined. In practically every case rupture has followed vomiting or retching after an abnormally large meal. The point of rupture in every case has been just above the diaphragm. In this small section of about 5 inches there is a transition from the esophagus. Also, we learn from the experimental work of McKenzie[10] that this is the weakest section of the esophagus and, furthermore, it is weaker than the normal stomach; but why the esophagus at this point should be weaker in a few persons than in others is not demonstrated. Some maintain that there is always disease in such cases.

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[1] Colgrove: Buffalo Med. Jour., May, 1873, p. 1849.
[2] Heyfelder: Tr. Path. Soc. London, 1837, xxxiii, 123.
[3] Guersent: Bull. Fac. de Méd. de Paris, 1812, i, 73.
[4] Lomax: New York Med. Rec., Jan. 6, 1906, p. 1.
[5] Oppolzer: Wien. med. Wchnschr., 1851, i, 61.
[6] Howse: Lancet, London, 1884, i, 113.
[7] Boyd: Tr. Path. Soc., London, 1881-82, xxxiii, 125.
[8] West and Andrews: Brit. Med. Jour., April 10, 1897.
[9] Bailey: New York Med. Jour., May, 1873.
[10] McKenzie: Diseases of the Nose and Throat, 1884, vol. xi.

RUPTURE OF ESOPHAGUS

No.	Sex	Age*	Alcohol†	Previous History	Onset	Symptoms	Emphysema	Duration of Life, Hours	Shape and Position	Results of Necropsy	Authority and Date
1	♂	50	?	Gouty; heavy eater, accustomed to emetics	Sudden, while vomiting	Felt something give way; intense pain; collapse; dyspnea	+	13	Complete transverse rent 3 fingers' breadth above diaph'gm	Collapse of the lung; air and gastric contents in both pleural cavities	Boerhaave[12] 1724
2	♂	?	+	Debauch the previous night	Sudden, after taking hot water to induce vomiting	Felt something give way; slightly hematemesis, severe pain, dyspnea; collapse	+	12	Longitudinal slit just above diaphragm admitting 2 fingers	Double pneumothorax; gastric contents in both pleural cavities	Dryden[13] 1787
3	♂	24	+	Severe epigastric pain and vomiting for several months	Sudden, during vomiting after dinner	Slight vomiting; severe epigastric pain	+	14	Large rent just above diaph'gm	Food found in pleural cavity	King[14] 1843
4	♂	38	+	Took lye when a child, since then difficulty in swallowing	Sudden, in attempting to swallow sausage which became impacted	Some hematemesis pain and dyspnea after effort to vomit	+	50	Gaping rent 1¼ by ⅜ in. about 3 inches above cardia	Gangrenous cavity in posterior mediastinum; food in both pleural cavities	Meyer[15] 1858
5	♂	35	+	Gastric disturbance for 6 wks. before	Sudden, after a debauch	Vomited at first; pain, dyspnea; collapse	+	11½	Longitudinal tear 5 cm. long encroaching on stomach	Double pneumothorax; gangrenous cavity in posterior mediastinum; fluid in pleural cavities	Gramatzki[16] 1867
6	♂	49	±	Not given	Sudden, after abnormally large meal	Felt something give way during vomiting; pain, dyspnea; thirst; collapse	+	16	Longitudinal slit 1 inch long just above the diaph.	Three quarts of fluid containing food in left pleural cavity; lung collapsed	Griffin[17] 1869
7	♂	35	+	Drinking hard for several days before onset	Sudden, after vomiting	Felt something give way; pain; dyspnea; thirst; collapse	‡	7½	Slit 1½ in. long in left side of lower esophagus	Gangrenous cavity in posterior mediastinum opening into left pleural cavity contained 1 qt. of fluid.	Charles[18] 1870
8	♂	31	+	Repeated attacks of gastritis; hematemesis delirium tremens	Sudden, in trying to dislodge a piece of meat impacted in esophagus	Pain and dyspnea; fever	+	180	Rent 2 inches long	Infection of posterior mediastinum	Fitz[11] 1877
9	♂	17	—	Attacks of blood-poisoning short time previously	Sudden, during vomiting	Hematemesis; intense feeling of suffocation; pain; collapse	?	4	Rent 1½ cm. long 1 in. above cardia	Opening into left pleural cavity which contained food particles	Taendler[19] 1878
10	♂	53	—	Dyspepsia for yrs. with occasional vomiting	Sudden, after feeling unwell for 2 hours after a meal	Severe pain in left side and sudden collapse	‡	7	Rent in posterior wall 1½ inches above diaph'gm	....	Adams[20] 1878
11	♂	48	?	Chronic gastric ulcer	Sudden	Vomiting followed by pain and collapse	—	15	Opening 2 inches long and 1 cm. wide about 2 cm. above cardia	Double pneumothorax; food in posterior mediastinum and both pleural cavities	Lindermann[21] 1887
12	♂	37	+	Good eater; alcohol moderate	Sudden nausea; felt something give way	Pain, collapse, cyanosis	+	Few	Clean tear 1 cm. long just above cardia	Left pleural cavity filled with food and gas	Wolff[22] 1894
13	♂	47	—	Dyspeptic; vomiting	Sudden, while vomiting	Pain, collapse, disappearance of cardiac dulness	+	13½	Rent 1½ inches long just above cardia	Left pneumothorax; stomach contents in both pleural cavities	Harrison[23] 1893
14	♂	55	‡	Healthy individual	Sudden, after vomiting	Pain, dyspnea, cyanosis	—	24	Rent ¾ inch long behind and to left	Food in left pleural cavity	West and Andrews[24] 1897
15	♂	59	+	Drinking hard for a week before	Sudden	Pain, dyspnea, effusion into left	+	37	Opening 1½ ins. long 2 inches above cardia	Accumulation in posterior mediastinum breaking into left lung but not the pleural cavity	Lindsay & Smith[25] 1899
16	♂	43	?	"Quiet"	Sudden vomiting after eating	Collapse	?	6	Rent 2 cm. long 6 cm. above cardia	Food in left pleural cavity	Heintze[26] 1900
17	♀	62	—	?	Sudden, after induced vomiting	Internal epigastric pain; dyspnea; collapse	+	22½	Rent ⅝ inch long 1½ ins. above diaphragm	Collapse of lung; food in posterior mediastinum and left pleural cavity	Bowlers & Turner[27] 1900
18	♂	40	+	Drunkard; much vomiting	Sudden, probably during vomiting	Pain, dyspnea, cyanosis, collapse	+	10	Rent 1½ ins. long just above diaphragm extending into stomach	Collapse of lung; food and gas in posterior mediastinum and left pleural cavity	McWeeney[28] 1900
19	♂	55	+	Fell from horse, fracturing skull. Operation	Sudden, vomiting after coming out of anesthetic	Not known	—	10	Rent 1½ inches long just above diaphragm	Food in left pleural cavity	Whitman[29] 1903
20	♀	10	—	Always well	Sudden, during sleep	Nausea, cyanosis, shock	—	18	Rent 1 cm. long 5 cm. above diaphragm	Food in left pleural cavity	Miller[30] 1911
21	♂	43	?	?	Probably during anesthetic	Cyanosis, shock	—	11	Ragged rent 3 ins. above diaphr'gm	Right lung collapsed; stomach contents in posterior mediastinum and right pleural cavity	Roy[31] 1911
22	♂	39	—	Always well	Sudden, one hour after large meal	Shock, cyanosis	—	176	Rupture 2 inches long at lower end of esophagus	Fluid in left pleural cavity	Walker 1914

* In this column ♂ denotes male, and ♀ female. † In this column + means yes, — no, and ± probably. ‡ Not stated.

From observation of the case reported and data from two others, I believe that it may be a developmental condition associated with ptosis of the viscera. An explanation of this theory, however, should be reserved until further study has been made from necropsies on subjects having visceral ptosis.

Granted that this section of the esophagus is weaker than any other and also weaker than the stomach, rupture has been explained to take place in one of the following ways: During the act of vomiting or retching there is spasm of the esophagus above the weak point. If the pressure from within is less than is needed to overcome the spasm and sufficient to cause rupture, the latter takes place. Secondly, if food becomes impacted in the esophagus above the weak section during the act of vomiting, and similar conditions of pressure are brought to bear on this area, rupture will occur.

PATHOLOGY

The rent in every case has been at the lower end of the esophagus and longitudinal in all except two cases. Usually there is a single opening on the posterior wall. This leads into the cavity of the posterior mediastinum, which may contain food particles. In the majority of cases this cavity communicates with one or both pleural cavities, which also contain liquid and solid food tinged with blood.

DIAGNOSIS AND PROGNOSIS

Difficulty in making an early diagnosis in this condition is due to the fact that the symptoms are referred to the upper abdomen and not to the esophagus. Most patients give a history of alcoholism with chronic gastric disturbance, of having vomited after a large meal, and during the effort experience the feeling of "giving way" in the upper abdomen. The patient is in a state of marked shock with subnormal temperature, high pulse, profuse sweating and some cyanosis. The respirations are usually slightly elevated. The face is drawn and anxious and the patient lies or sits with the knees drawn upward. Pain is referred to the epigastrium and lower chest, either on the right or left, but usually the latter. There is marked tenderness and board-like rigidity throughout the upper abdomen. Chest examination may show a few râles at the base and sometimes hyperresonance or flatness on percussion depending on whether there is much air or fluid in the pleural cavity. The picture up to this time is that of acute perforation of a gastric or a duodenal ulcer or acute pancreatitis. As time goes on, and especially if the patient has swallowed any liquid, the symptoms point more to some chest condition. The respirations become rapid and shallow, and the temperature elevated. The chest-signs spoken of above become more pronounced and the heart pushed to the right, the area of heart dulness practically obliterated. Aspiration of the chest will reveal fluid and gas. If the former is examined microscopically, food particles may be distinguished. In some cases there will be emphysema of the chest and neck. In the series of cases reviewed, mine was the only one diagnosed during life, and that wrongly at first.

The prognosis in this condition is grave. Not a single case of recovery has been reported. Most patients die within twenty hours. The one reported by Fitz[11] lived 180 hours.

TREATMENT

Very little except palliative measures can be found in the literature concerning treatment of this condition. From the observation of my case, it does seem possible that should the diagnosis be made early, there might be some chance of saving the patient by approaching the lesion through the posterior mediastinum, repairing the rent and draining the mediastinum and pleural cavity. Such an operation, however, would add much shock to a patient already in that condition so that recovery would be questionable. Even should the patient survive the operation a few days, one still has to combat sepsis in the posterior mediastinum, pleural cavity and lung-tissue. As yet, operative measures look none too bright. The case reported below occurred in my practice.

REPORT OF CASE

Patient.—A Swedish granite-cutter aged 39, was seen in consultation with Dr. Dion of Quincy at 1:30 a. m. March 16, 1914. Family history was negative. Patient had always been well. He had never used alcohol in any form.

Present Illness.—About seven hours before being seen patient had eaten an unusually large meal and taken two drinks of whisky. About one hour later he vomited. During this effort severe pain was felt in the epigastrium and left lower chest.

Examination.—Patient is well developed and nourished, somewhat cyanotic, and face has anxious expression. Pulse 120, temperature 97.6, respirations normal. Whole abdomen rigid but especially the upper half where there is marked tenderness and spasm. Liver dulness present.

Operation.—Incision 6 inches long at the outer border of the right rectus muscle over the gall-bladder region. Liver apparently enlarged, lower border of right lobe being on a level with the crest of the ileum, lower border of stomach about 1 inch below level of umbilicus. Appendix, stomach, duodenum, spleen and kidneys normal. Gall-bladder distended, ducts patent. Cholecystostomy performed; cigaret drain to head of pancreas which seemed swollen. Wound closed in layers.

Postoperative History.—During the next few hours the temperature and respirations became elevated. When patient was seen at 4 p. m. the pulse was 140, temperature 103, respirations 40. There was flatness in the left chest from the middle of the scapula downward and diminished and distant breathing in this region. Aspiration of the chest gave a straw-colored fluid. As it was thought that this was a beginning empyema, the pleural cavity was drained by resecting a piece of the eighth rib. The respirations at once were lowered. On the following morning, March 18, the nurse reported that all the nourishment taken was passing through the opening in the chest wall. March 19, a gastrostomy was done under novocain anesthesia and the patient afterward fed in this way. Temporary improvement followed feeding but the patient succumbed March 23, at 12:30 a. m., about 172 hours after the rupture of the esophagus.

Necropsy.—March 23, ten hours after death by Drs. Middleton and Ahlstrom. Well-nourished male, 6 feet tall, weight 165 pounds. Incision of operation 6 inches long slightly to right of median line starting 2 inches above umbilicus and extending upward from which hepatic fluid was escaping. There was a parallel incision 2 inches to the left of the median line 1 inch long. Incision in left back in midscapular line 1 inch below scapula and 2 inches in length. Liver enlarged, necrosis of lower border of right lobe. Gall-bladder macerated. Stomach incised and sutured to abdominal wall at site of smaller incision, evidently for feeding. Abdominal and pelvic viscera below liver apparently normal. Entire back and outer side of right lung adherent to chest wall. A few pleural adhesions at back of left lung. Left pleural cavity contained, throughout its extent, a thick, sticky, grayish-yellow fluid. There is a rupture of the extreme lower end of the esophagus, 2 inches in length, extending upward from the cardiac end of the stomach. Rupture on posterior wall of the esophagus. Edges of rent clean-cut, no evidence of ulcer, new growth or diverticulum.

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[11] Fitz: Am. Jour. Med. Sc., 1887, lxxiii, 17.

A brief review of the unquestionable cases reported in the literature follows: Number of cases, twenty-two; males, twenty; females, two. Average age, 41.3 years. Of the males eleven were addicted to alcohol, four were abstainers, four were questionable and one not stated; neither of the females used alcohol. Emphysema was present twelve times, absent six times, questionable in two, not stated in two. No patient recovered, the average duration of life being 30.4 hours.

CONCLUSIONS

1. Spontaneous rupture of the apparently healthy esophagus is a rare condition.
2. The exact cause is not known.
3. Accurate diagnosis is difficult to make.
4. The mortality will always be high.

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Note.—In addition to the references in the text, the following will be found of interest:

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FOUR YEARS' EXPERIENCE WITH SALVARSAN AND NEOSALVARSAN IN THE TREATMENT OF NERVOUS DISEASE DUE TO SYPHILIS *

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Soon after the release to the profession of Ehrlich's first synthetic arsenic product, the ultra-enthusiastic gave forth the cry to the carrier of the *Spirochaeta pallida* that the *salvator hominum* had been found. The extremely conservative held the more tenaciously to mercury, the approved therapy of centuries, and pessimistically pictured the dangers of salvarsan. While as yet our conclusions may not be beyond the pale of dispute, it may prove valuable to make a reckoning of the experience of four years in the continuous use of the powerful drug. That a new era in the treatment of syphilis has been entered there can be no doubt. The discovery by the lamented Schaudinn, the dark-field microscope and the ingenious adaptation by Wassermann of the Bordet-Gengou biochemical reaction have set our feet on firm rock in our determination of skin and visceral syphilis. Colles' law has been given the lie; Profeta's dogma has been discarded. By the achievement of Noguchi and Moore the parasyphilitic wraith has vanished forever "into thin air," revealing the reality, the syphilogenous nature of general paresis and tabes, and making certain that the findings in the spinal fluid represent to a degree, in these cases, the ravages of the pale spirochete on the investments and substance of the central nervous system. It is from the treatment of three hundred cases of syphilitic affections of the nervous system that our conclusions shall be drawn.

The nervous system in most persons is particularly tolerant to the toxins of syphilis, or better said, the nervous system performs its functions patiently and faithfully without display of symptoms for from ten to thirty years while its very vitals are being destroyed by a chronic intoxication, before it finally manifests that all is not well. From this fact grew our misconception called latent syphilis. With our present laboratory aids we know now that evidence of invasion of the central nervous system may occur within a few weeks of the time of the initial lesion. Indeed, occasionally we meet a case in which even before the so-called cutaneous secondary rash has appeared, or while it is still present, the central nervous system has been overwhelmed and the fluid which bathes it shows a marked cellular exudate. This knowledge of the early invasion of the central nervous system forewarns us emphatically that the most auspicious moment for the treatment of syphilitic nervous affections is in that all-important time which may be termed the tolerant period.[1] This period having passed by and the toxin having been at work subtly for years in a subterranean manner, the defenses yield at last, and grievous evidence that the enemy is within the walls appears. It is at this point that the neurologist is usually summoned to combat the inroads of the invader. We can now, in a comparatively short period, proceed to check the invasion in a manner almost as cunning as the enemy's own methods and can preserve the integrity of that portion of the system which has not been actually destroyed. Having rid ourselves of the blighting delusion of the specificity of potassium iodid and of the futility of mercury by mouth, and even intramuscularly or by inunctions when given in the indifferent manner which has too long prevailed, we take hold eagerly of the new remedy which is more rapid, more certain and more complete in its action.

Salvarsan is not a panacea. Nothing could militate more against the correct evaluation of the efficiency of this remedy than its promiscuous use and the impression that a few doses of salvarsan will restore health in all cases of syphilitic nervous disease regardless of their duration and severity. We do not wish to give the impression that we would deny to any definitely syphilitic person the advantage of salvarsan treatment, but we do believe that it is unjust to both patient and remedy to promise or expect the regeneration of destroyed nervous tissue with restoration of function. For instance, to predict great improvement to a tabetic patient whose ataxia has existed for ten or fifteen years with pronounced hypotonus, vesical incontinence and negative serum and spinal fluid, is not only unfair, but is detrimental to the establishment of the true value of salvarsan. On the other hand, in the acute cases with symptoms more or less recent, with an active reactionary and inflammatory process in the tissues as revealed by the blood and spinal fluid, the therapeutic capability of salvarsan is often but little short of miraculous. When one encounters one day a man stricken down at his work, irrational and aphasic, and forty-eight hours later beholds him speaking and in his right mind, one cannot but believe that a potent agent has been applied. One is driven to a similar conclusion when one sees men come into the hospital on crutches and go out a few weeks later walking alone or aided slightly by a single cane, which is later discarded.

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* From the Neurological Institute, New York.

[1] Graves: Med. Rec., New York, Aug. 24, 1912.

It is in the recent and acute cases that the use of salvarsan cannot be too strongly urged.

METHOD OF ADMINISTRATION

The use of salvarsan at the Neurological Institute was begun in June, 1910. Since that time upward of 1,500 administrations of salvarsan and neosalvarsan have been made on the First Division Service. The routine method of preparation and administration has been but slightly altered during these four years. The quantity of freshly distilled sterilized water has been reduced, 25 c.c. being used for each 0.1 gm. of salvarsan, and 10 c.c. for each 0.1 gm. of neosalvarsan. We are not convinced of any increased therapeutic value of concentrated dosage, such as giving a full dose in 10 or 20 c.c. of water; but such decrease in the quantity of fluid as we have made we believe can be done with safety and a considerable saving of time. Intravenous administration is the method of choice, the intramuscular method being usually painful, less prompt in its effects and often complicated by subsequent undesirable features, such as permanent induration or abscess. Cutting down on a vein is barbarous and unnecessary except in extremely corpulent persons with obscured veins, as with a little care a needle can be introduced into a vein in the cubital space without difficulty. In treating very young children the intramuscular method is sometimes necessary. In introducing salvarsan into the vein the gravity method has proved simplest and most practicable.

EFFECTS OF SALVARSAN

During the past twelve months we have had a growing conviction that the potency of neosalvarsan is not so great as that of salvarsan, so that we have returned to the use of the original preparation. The immediate after-effects of the newer compound are usually milder, but its curative value is also less. Others working with cases not neurologic have arrived at the same conclusion.[2] The immediate after-effects, when unpleasant at all, are limited to nausea or vomiting or the recurrence of tabetic pains, all of which with the aseptic precautions now used are comparatively rare. The latter symptom is probably due to the increased tension in the roots or root ganglia resulting from the influx of scavengering leukocytes which come in to carry away the recently killed spirochetes. Within twenty-four or forty-eight hours the patient usually experiences a feeling of well-being such as he has not had for some time, and if he has been having pains they have disappeared. In fact, after the first dose of salvarsan, tabetic pains which may have tortured the patient for a decade or more may disappear never to return. If we were called on to select the single greatest benefit which follows the use of salvarsan, it would be the relief obtained by the disappearance of the hideous pains of tabes. Man can endure almost any disability if he is free from pain. Fortunately, that is not the sole benefit, but that is usually the first lasting improvement. Subsequent improvements and final results following the administration of salvarsan in nervous diseases of syphilitic origin depend entirely on the character and duration of the disease.

TROPHIC DISEASE

Forms of disease styled trophic, such as Charcot joint, have given very little encouragement that a remedy has been found in salvarsan. The insufficiency of the therapy becomes apparent when one sees the disintegrating process in the joint go steadily on even though the serologic vestiges of syphilis have been rendered negative.

CEREBRAL ENDARTERITIS

Another variety of case resulting from syphilis, which is treated with meager success, is cerebral endarteritis which has gone on to thrombosis or rupture. The hemiplegic patient is usually seen in a neurologic clinic some weeks or months after the "stroke," after the edema around the lesion has largely subsided. If syphilitic, he will show a positive Wassermann in serum or spinal fluid or both, but a cellular exudate in the spinal fluid is almost always wanting. True, an endarteritis may occur in a tabetic or a cerebrospinal luetic patient, in which case the spinal fluid will show an increase in cells. The cells may be caused to disappear and the Wassermann to become negative, but salvarsan has not been observed to affect to any considerable extent the symptoms resulting from the arteritis, allowing for the slight improvement which usually occurs spontaneously. Endarteritis, occurring early in the disease and giving rise to focal symptoms, usually yields quite readily to salvarsan therapy, if an area of softening has not already occurred.

SENSORY-TRACT DISEASE

In a discussion of the results obtained in the treatment of tabes with salvarsan, the cases fall readily into two classes. First, those of long standing in which, besides the ataxia, marked hypotonus has developed, and an examination of the serum shows that the active inflammatory resistance on the part of the body has subsided either because the syphilitic process has been overcome, which is more probable, or because the tissues have become so used to the chronic intoxication that they no longer resist — in short, those cases in which the Wassermann reaction in serum or spinal fluid, or in both, is negative, and the cellular elements in the spinal fluid are absent or few, or only slightly above normal. The citation of a few such cases will serve best to make this clear:

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[2] Nelson, Kent, and Haines, Edgar F.: Observations of the Results of Nine Months' Experience with Neosalvarsan at the United States Military Prison Hospital, Fort Leavenworth, Kan., The Journal A. M. A., March 28, 1914, p. 989.

CASE 1.—W. H., man, aged 44, married. Complaint: Unable to walk or stand alone. Urinary incontinence. Pain in the legs and arms, shooting in character. Numbness and tingling in the hands and feet. Belt-like sensation around the lower ribs, at other times around the abdomen.

Duration two and one-half years. Progressively worse. Chancre twenty-five years before.

Examination.—Marked ataxia and hypotonus; unable to stand alone. Absent tendon-jerks. Postural sensation in the lower extremities wanting. Argyll Robertson pupils and emaciation. Wassermann serum positive; Wassermann fluid negative; Globulin positive; Cells 56 per cubic millimeter.[3]

Treatment.—Salvarsan, 0.6 gm., three doses, and tonic measures.

Six months later the patient's condition was quite the same without any interval of appreciable improvement. Wassermann serum negative.

CASE 2.—L. M., man, aged 36, married. Complaint: Girdling pains in the right groin and shooting down the legs. Drawing and gripping in the back and arms, unsteadiness in walking. Polyuria and dysuria. Loss in weight and strength. Duration eight years. Chancre eighteen years before.

Examination.—Ataxic gait. Rombergism. Considerable hypotonus and impaired postural sense. Absent tendon reflexes and Argyll Robertson pupils. Wassermann serum positive; fluid negative; globulin negative; cells 3 per cubic millimeter.

Treatment.—Salvarsan, 0.6 gm., three doses; neosalvarsan, 0.9 gm., one dose.

Three years after the first dose the patient was still having attacks of the same pains, was markedly ataxic and showed the same physical signs. Wassermann serum negative; fluid negative; globulin negative; no cells.

CASE 3.—E. R., man, aged 53, widower. Complaint: Attacks of gastric pain. Pain of jerking character in the legs. Dysuria. Numbness in the soles. Duration seventeen years, progressively worse. Chancre twenty years before.

Examination.—Argyll Robertson pupils, slight Rombergism. Absent knee and ankle reflexes. Ataxia not marked. Wassermann serum negative, fluid negative; globulin negative; mononuclear cells 53.

Treatment.—Neosalvarsan, 0.9 gm., three doses; 0.45 gm., one dose, within three weeks.

Observation seven months later shows no alteration in the patient's condition. He still complains of the pains in his legs and numbness. The dysuria is possibly improved. Wassermann serum negative; fluid negative; globulin negative; no cells.

In the second class of tabetics the condition is of more recent development and usually the infection is more recent. To the majority of patients of this class a very good prognosis can be laid down, based, of course, on the serologic findings. Considerable difficulty often arises here in making a correct estimate of the case inasmuch as these are the patients who, during the past decade, have been the rounds of mercury pills and potassium iodid drops. The inefficiency of the treatment "stands condemned by its eloquent results," as Fordyce[4] has so aptly put it. The difficulty lies in the fact that the iodid treatment may have affected the condition of the serum in its relation to the Wassermann reaction, which is our compass in directing antisyphilitic therapy, without having done any real damage to the spirochete. Fortunately for this particular feature, the patience of the average patient soon wearies of an oft-repeated remedy which produces no marked visible results, and so the reaction of the serum remains more or less unmodified by the "drops and pills" and is a true guide. In those cases favorable for treatment, hypotonus of the hip-joints has not developed, although vesical incontinence may be present as well as ataxia and impairment of the postural sense. These symptoms may disappear in whole or in part, but in many cases even after vigorous treatment, vestiges of the symptoms remain. In such cases the Wassermann reaction is usually plus in the serum, and plus or minus in the spinal fluid; the globulin excess is plus; mononuclear cells range from twenty to several hundred per cubic millimeter, and Fehling reduction is plus. The treatment in such a case does not consist in two or three injections of salvarsan, but aims to render negative the Wassermann reactions and to reduce the number of cells to zero. The most vigorous treatment may be necessary to accomplish this result. It may take five injections at frequent intervals, or it may take twenty more. One method which we employed was to give a series of four full doses of neosalvarsan with a forty-eight hour interval between doses, and then after two weeks to repeat this if necessary. This method we have given up and are now employing salvarsan in full doses every five or seven days for a greater or less period, being guided chiefly by the state of the spinal fluid, especially with regard to the cell-content. The following cases will illustrate this group:

CASE 4.—F. B., man, aged 47, married. Complaint: Pain in the back and legs, occasional vesical and rectal incontinence; depressed, speech halting at times, hands tremulous, morphin habit. Duration six years, progressive. Chancre seventeen years ago.

Examination.—Slight Rombergism, no ataxia, knee and ankle reflexes absent. Pupils unequal but respond to light. Wassermann serum negative; cerebrospinal fluid positive; globulin positive; mononuclear cells 90.

Treatment.—Neosalvarsan, 0.9 gm., four doses within one month. Observation three months later: Pains have disappeared. Has stopped morphin. General condition improved. No incontinence. Physical signs remain the same. Pupils sluggish. Now able to earn his living. Wassermann serum negative; cerebrospinal fluid negative; globulin negative; cells 17.

CASE 5.—J. M., woman, aged 35, married. Complaint: Shakiness and weakness in both legs; pains in knees and legs; jerking in arms and legs at night. Drops articles from her hands. Drooping of left lid; dimness of vision. Duration five years. Stationary, lues denied.

Examination.—Slightly ataxic gait; Rombergism; Argyll Robertson pupils; left facial weakness. Hemorrhage into vitreous of right eye. Incoordination of arms. Knee and ankle reflexes absent. Wassermann serum positive; cerebrospinal fluid positive; globulin positive; mononuclear cells 42.

Treatment.—Neosalvarsan, 0.9 gm., three doses within three weeks. Observation nine months later: The ataxic gait has disappeared. Facial weakness gone. No Rombergism. Reflexes and pupils same; vitreous clear. Feels quite well. Wassermann serum negative; cerebrospinal fluid negative; globulin negative; mononuclear cells 4.

CASE 6.—A. D., man, aged 45. Complaint: Weakness in right leg. Heaviness of right thigh and abdomen. Walking difficult.

Examination.—Ataxia, Rombergism; Argyll Robertson pupils, absent ankle and knee reflexes. Hypotonus of lower extremities. Hyperesthesia at sacral crests. Duration two months; progressive; lues denied. Wassermann serum negative; cerebrospinal fluid negative; globulin positive; mononuclear cells 81.

Treatment.—Salvarsan, 0.6 gm., two doses at interval of seven days. Observation one month later; walking easier and better, ataxia less. Slight heavy feeling still present, heavy in right thigh. Reflexes and pupils the same. Continues to work as salesman. Wassermann serum negative; cerebrospinal fluid negative; globulin negative; mononuclear cells 8.

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[3] In all the cases reported in this paper Fehling's solution was reduced by the spinal fluid.

[4] Fordyce, John A.: The Administration of Salvarsan in Syphilis, THE JOURNAL A. M. A., Oct. 5, 1912, p. 1231.

Case 7.—L. L., man, aged 36, married. Complaint: Loss of strength, pain and cold sensation in both legs. Vesical incontinence, tightness about the chest. Duration four years; progressive. Chancre fourteen years ago.

Examination.—Romberg; ataxia; walks with cane. Uncertain in sitting posture; moderate hypotonus in hips. Incoordination in arms and legs. Reflexes absent in biceps and triceps, knees and ankles. Argyll Robertson pupils; tactile anesthesia over lower extremities.

Wassermann serum positive; cerebrospinal fluid negative; globulin weakly positive; mononuclear cells 142.

Treatment.—Neosalvarsan, 0.9 gm., six doses within six weeks. Observation one year latter: Feels well; much less dependent on cane in walking. Paresthesia and pain gone. No vesical incontinence. Can attend to business.

Examination.—Romberg and ataxia less marked; other findings the same. Wassermann serum positive; cerebrospinal fluid negative; globulin negative; mononuclear cells 48.

Case 8.—M. V., man, aged 44, married. Complaint: Pain down the back of the legs and inability to walk without crutches. Duration 9 months; progressive. Lues denied.

Examination.—Walks uncertainly with crutches. Rombergism. Absent knee and ankle reflexes. Pupils irregular, unequal, very sluggish to light. Wasserman serum positive; cerebrospinal fluid negative; globulin negative; mononuclear cells 33.

Treatment.—Neosalvarsan, 0.9 gm., three doses. Observation one month later, improvement remarkable. Walks alone without crutch or cane. Ataxia scarcely noticeable. Reflexes and pupils remain unchanged. Lumbar puncture refused. Wassermann serum positive.

Case 9.—F. D., man, aged 47, married. Complaint: Paresthesia of left hand. Loss of power and control of legs; wasting of left leg. Pains in legs and in the bones. Urinary incontinence, walks with crutches. Duration eight years; progressive. Chancre twenty-six years ago.

Examination.—Ataxic gait, Rombergism. Partial paralysis left thigh and leg. Tremor of hands; incoordination of arms and legs. Knee and ankle reflexes absent. Pupils unequal, sluggish to light. Hypesthesia of legs. Wassermann serum negative; cerebrospinal fluid positive; globulin positive; mononuclear cells 135.

Treatment.—Salvarsan, 0.6 gm., five doses in four weeks. Observation three months later: Ataxia much diminished. Gait improved. No pain, paresthesia still present. Pupils sluggish to light. Knee- and ankle-jerks absent. Wassermann serum negative; cerebrospinal fluid negative; globulin negative; mononuclears 32.

Case 10.—M. B., woman, aged 36, married. Complaint: Legs feel weak and trembly; pain down outer side of both calves, feet cold and numb; drops articles occasionally from left hand; difficulty in walking. Duration five years, getting worse recently. No knowledge of infection.

Examination.—Slight Rombergism, unsteady gait, slight hypotonus of hips and knees, incoordination and postural disturbance of lower extremities. Absent knee- and ankle-jerks, also gone in the arms. Argyll Robertson pupils. Wassermann serum negative; cerebrospinal fluid negative; globulin negative; mononuclear cells 107.

Treatment.—Salvarsan, 0.6 gm., four doses in a month. Three months later felt much stronger, no pain; normal feeling in extremities, but had a girdle sensation; gait much improved but still some unsteadiness. Wassermann serum positive; cerebrospinal fluid negative; globulin negative; cells 13.

Treatment.—Salvarsan, 0.6 gm., one dose, and thirty inunctions of mercury. Five months later only one remaining symptom is slight unsteadiness in walking; pupils and reflexes unchanged. Romberg less. Wassermann serum negative; cerebrospinal fluid negative; globulin negative; cells 5.

Case 11.—C. J., man, aged 50, married. Complaint: Pain in the middorsal region which starts in the back and runs around the trunk to the epigastrium. Jumping pains and soreness in the thighs. Tense, tight feeling about the abdomen; morphin regularly for pain. Duration seven years, progressive. Chancre twenty-seven years before.

Examination.—Rombergism, very slight ataxia, tremor in the hands, no hypotonus, left knee-jerk absent, right diminished, ankle-jerks gone. Argyll Robertson pupils. Wassermann serum positive; cerebrospinal fluid negative; globulin positive; mononuclear cells 42.

Treatment.—Salvarsan, 0.6 gm., three doses in three weeks, cauterization of the back. One month later patient was entirely free from pain and tight sensation; has taken no morphin and has no desire for it. Wassermann serum negative; cerebrospinal fluid negative; globulin negative; cells 0.

Case 12.—F. G., man, aged 55, married. Complaint: Shooting pains in the legs, difficulty in walking; frequent desire to urinate, diplopia, band sensation about the waist, weakness of the back. Duration eighteen years; progressive; worse. Chancre twenty-six years ago.

Examination.—Very ataxic gait, marked Rombergism, incoordination of legs, absent knee and ankle reflexes. Argyll Robertson pupils. Wassermann serum positive; cerebrospinal fluid positive; globulin positive; mononuclear cells 42.

Treatment.—Salvarsan, 0.6 gm., three doses in ten days. One month later shows less ataxia in walking, is free from pain and girdle tightness and general feeling of more strength and vigor. Wassermann serum negative; cerebrospinal fluid negative; globulin negative; cells 36.

Case 13.—E. L., woman, aged 50, married. Complaint: Sharp shooting pains through both lower extremities to the feet, also through the arms to the hands. Aching pains through the head recently, creeping feeling all over the body; numbness in the buttocks; tightness around the abdomen, loss of appetite, gastric pain and obstinate constipation; dysuria. Knees give way under her. Duration seven years, getting rapidly worse. Rash and sore throat eleven years before.

Examination.—Rombergism, slight ataxia, no hypotonus, absent knee and ankle reflexes, pupils equal, very sluggish to light. Wassermann serum positive; cerebrospinal fluid positive; globulin positive; mononuclear cells 137.

Treatment.—Salvarsan, 0.3 gm., two doses; 0.6 gm, two doses in six weeks. Six months later she was enjoying exceptionally good health, free from pain. Is hyperesthetic around the left side of chest. Constipation severe. Dysuria gone. Paresthesia greatly diminished. No difficulty in walking. Wassermann serum negative; cerebrospinal fluid negative; globulin negative; no cells.

While the object of antisyphilitic treatment is sterilization of the spinal fluid and blood, it will be noted that this was not attained in several of the foregoing cases. This was due chiefly to imperfect cooperation on the part of the patients in returning for treatment. But even when the cooperation is complete and the treatment most vigorous, there is a small percentage of cases in which the Wassermann in the serum is so persistent as to justify the term "Wassermann-fast," as recently applied by Dr. David M. Kaplan,[5] director of the laboratory of the Neurological Institute. The report of one such case will suffice:

Case 14.—The patient is a professional man aged 47, unmarried, who came complaining of incomplete control of his legs, weakness and awkwardness in walking associated with numbness in the peroneal region and a cushion sensation under the ball of the foot, with an occasional pain in the legs. This condition had been remarked during the past four months. He recollected having had an indefinite sore on the penis, to which he paid no attention, which healed spontaneously.

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[5] Kaplan, D. M.: The "Wassermann-Fast Tabes," The Journal A. M. A., Dec. 20, 1913, p. 2214.

Examination showed a moderate Romberg, unsteadiness of gait, fine tremor of the hands and lips on effort, absent knee and ankle reflexes and very small equal pupils wanting in reaction to light. Tabes being evident, he was given the treatment recorded in Table 1.

Besides the arsenical treatment he has come faithfully every week and received 1 grain of mercury in the form of salicylate intramuscularly for the past forty weeks. He has never missed a day at work during this period except when he was laid up twenty-four hours for lumbar puncture. To-day he is hale and strong, feels exceptionally well and is engaged in a busy professional career. His mind is unclouded, his tremor has disappeared, his walking is above suspicion and his Rombergism is gone. His reflexes at the knee and ankle are still absent and his pupils are smaller than the head of a pin and are immovable to light.

TABLE 1.—EFFECT OF TREATMENT IN CASE 14, CHRONOLOGICALLY CONSIDERED

Date	Serum Wassermann	Cerebrospinal Fluid				Salvarsan, gm.	Neosalvarsan, gm.
		Wassermann	Globulin	Cells	Fehling's Solution Reduction		
11/29/10	+	+	—	94	+	...	....
12/ 3/10	..	..	..	..	..	0.6	....
12/20/10	+	+	—	68	+	...	....
2/ 8/11	..	..	..	..	..	0.6	....
4/18/12	+	+	—	79	+	...	....
4/19/12	..	..	..	.	..	0.6	....
4/25/12	..	..	..	..	..	0.3	....
5/ 2/12	..	..	..	..	..	0.3	....
5/ 9/12	..	..	..	..	..	0.3	....
5/10/12	+	—	—	36	+	...	....
5/16/12	..	..	..	..	..	0.3	....
6/11/12	..	—	—	12	+	...	....
10/ 8/12	..	..	..	..	..	...	0.9
10/15/12	..	..	..	..	..	...	0.9
10/21/12	..	..	..	..	..	...	0.9
10/24/12	..	..	..	..	..	...	0.9
11/ 8/12	..	..	..	..	..	...	0.9
11/21/12	..	..	..	..	..	...	0.9
12/ 6/12	+	..	..	..	..	...	0.9
12/19/12	..	..	..	..	..	...	0.45
1/10/13	+	—	—	8	+	...	0.9
1/23/13	+	..	..	..	..	...	0.9
3/ 7/13	+	..	..	..	..	...	....
3/20/13	+	..	..	..	..	...	....
5/27/13	+	—	—	5	+	...	0.9
7/18/13	+	..	..	..	..	...	....
10/ 4/13	+	+	—	35	+	...	0.45
10/11/13	..	..	..	..	..	...	0.45
10/18/13	..	..	..	..	..	...	0.45
10/25/13	+	..	..	..	..	...	0.45
11/ 1/13	+	—	—	12	+	...	0.45
11/ 8/13	..	..	..	..	..	...	0.45
1/23/14	+	—	—	28	+	0.3	....
3/29/14	..	..	..	..	..	0.5	....
4/11/14	..	..	..	..	..	0.4	....
4/18/14	..	..	..	..	..	0.5	....
4/25/14	+	—	—	13	+	0.5	....

OPTIC-NERVE ATROPHY

Early adverse criticism of results following salvarsan administration made capital of the fact that optic-nerve atrophy was sometimes observed. Faulty technic may have been the cause of such a sequela, but from our observations we are inclined to believe that the optic atrophy was already in process, although perhaps not demonstrable, at the time that the drug was given. For we have seen an incipient optic atrophy the result of syphilitic virus go steadily forward to complete atrophy while under vigorous salvarsan therapy.

Case 15.—O. L. R., man, aged 41, married. Complaint: Pains through the trunk, in the elbows and knees, girdle pains, vesical incontinence, obstinate constipation. Poor control of legs, inability to walk in the dark. Hypotonus. Duration one year; progressive; chancre ten years before.

Examination.—Romberg, Argyll Robertson pupils; diplopia. External strabismus left eye. Slight diffuse pallor each optic disk, visual fields slightly reduced. Knee and ankle reflexes absent, also gone in biceps and triceps. Wassermann serum positive; cerebrospinal fluid positive; globulin weakly positive; mononuclear cells 110.

Treatment.—Neosalvarsan, 0.9 gm., five doses in three months; salvarsan, 0.3 gm., four doses during succeeding nine months. Observation one year later: no pain, no incontinence, but still ataxic. Pallor of optic disks very pronounced, visual fields much reduced, sight almost gone in the left eye. Strabismus still present. Wassermann serum positive; cerebrospinal fluid positive; globulin positive; mononuclear cells 33.

On the other hand, we have observed a progressing optic-nerve atrophy held in check by the use of salvarsan; in fact, vision improved after therapy.

Case 16.—J. D., man, aged 37, married. Complaint: Failing vision for two and a half years, cannot now see to read. Hearing also failing. Sharp, stabbing pains in the legs, at other times cold sensation in the legs; indescribable disagreeable sensation in the abdomen. Chancre 15 years ago. Treated for eight months with mercury and potassium iodid by mouth.

Examination.—Nutrition good, no Romberg, no ataxia, no hypotonus, very little postural disturbance. Knee reflexes diminished, ankle-jerks present. The pupils are equal but irregular and moderately dilated. Reaction to light is almost imperceptible, but good in accommodation. Visual fields reduced. Counts fingers at 4 feet. Fundi show marked optic atrophy. Wassermann serum positive; cerebrospinal fluid positive; globulin positive; mononuclear cells 10.

He developed an acute mania and spent eight weeks in a state hospital. Three months after examination he received three doses of neosalvarsan within ten days. Four months later the physical signs were unchanged. The optic disks still showed an unaltered marked atrophy. He could now count fingers across a room, recognize persons and go about unaided without difficulty. Ten months after treatment, however, vision was definitely failing.

When laying stress on the beneficial results following the use of salvarsan it is well for us to bear in mind the remarkable curative power which Nature alone possesses. A case which emphasizes this point is as follows:

Case 17.—J. Q., man, aged 35, single. Complaint: Lightning pains in the legs, great difficulty in walking, unable to stand alone, difficulty in starting the stream of urine, occasional rectal incontinence, severe abdominal cramps at times and double vision. This condition had developed during the past three years and was now practically stationary. He had had a chancre twenty years before, which was untreated.

Treatment.—This consisted of four months of weekly intramuscular injections of mercury and two injections of salvarsan, six months ago, from which he experienced little relief. One month ago he came down with typhoid fever from which he has just recovered. On examination he is badly emaciated, unable to stand alone, profoundly ataxic, the tendon reflexes are gone and the pupils rigid to light. Wassermann serum negative; cerebrospinal fluid negative; globulin weakly positive; mononuclear cells 28 per cubic millimeter.

Neither the patient's condition nor the reaction of the serum warranted active syphilitic treatment; so he was placed on tonic measures, as massage baths, electricity and such exercise as he was able for. After two months he had gained 30 pounds in weight and was correspondingly stronger. He could stand and walk alone, with moderate ataxia. His pains had ceased, his diplopia, dysuria and rectal incontinence had disappeared. Wassermann serum negative; cerebrospinal fluid negative; globulin negative; cells 3.

Here was a man who had sufficient treatment six months before to render negative his Wassermann reactions without improvement in symptoms, succumbing to an acute infectious disease, during the convalescence from which his cerebrospinal fluid passed from the pathologic to the normal state and his symptoms were vastly ameliorated without antisyphilitic remedy. Considerable theorizing might be done, but the indisputable fact is the remarkable recuperative and reparative power of the body tissues on which we can depend in combating the toxins of syphilis.

Table 2 shows what a striking effect salvarsan and neosalvarsan have on the Wassermann reaction, globulin content and cell-count in the cerebrospinal fluid in tabes dorsalis.

TABLE 2.—EFFECT OF SALVARSAN AND NEOSALVARSAN IN TABES DORSALIS

No. of Example	Serum, Wassermann	Cerebrospinal Fluid Wassermann	Cerebrospinal Fluid Globulin Excess	Cerebrospinal Fluid No. Cells	Reduction of Fehl'g's Solution	Salvarsan, Gm.	Number of Doses	Neosalvarsan	Number of Doses	Serum Wassermann	Cerebrospinal Wassermann Fluid	Cerebrospinal Fluid Globulin Excess	Cerebrospinal Fluid No. Cells	Reduction of Fehling's Solution
1	—	—	—	107	+	0.6	3	0.9	2	—	—	—	5	+
2	+	+	—	70	+	0.6	2	0.9	4	+	—	—	15	+
3	—	+	+	90	+	...	..	0.9	4	—	—	—	17	+
4	+	—	+	142	+	0.6	1	0.9	5	—	—	—	2	+
5	—	—	—	22	+	...	 ..	0.9 0.45	2 1	—	—	—	0	+
6	—	+	+	96	+	...	..	0.9	4	—	+	—	21	+
7	—	+	+	81	+	0.6	2	....	..	—	—	—	8	+
8	+	+	+	33	+	0.6	1	0.9	1	—	—	—	32	+
9	+	+	+	42	+	0.6 0.3	2 1	....	..	—	—	—	3	+
10	—	+	+	55	+	...	 ..	0.9 0.45	2 1	—	+	—	33	+
11	+	+	+	135	+	0 6	2	....	..	—	—	—	32	+
12	+	+	+	192	+	0.6 0.3	2 3	0.9	2	—	—	—	16	+
13	+	—	+	42	+	0.6	3	....	..	—	—	—	0	+
14	+	+	+	42	+	0.6	3	....	..	—	—	—	36	+
15	+	—	—	53	+	0.6 0.3	3 1	....	..	+	—	—	5	+
16	+	—	—	3	+	0.6	3	0.9	1	—	—	—	0	+
17	+	—	+	273	+	0.6	2	....	..	+	—	—	11	+
•18	—	—	—	61	+	0.6	4	....	..	—	—	—	13	+
19	—	—	—	53	+	0.6	4	....	..	—	—	—	0	+
20	+	+	—	6	+	0.3	4	....	..	—	—	—	0	+
21	+	+	+	96	+	0.3	3	....	..	—	+	—	15	+
22	+	+	+	137	+	0.6	3	....	..	—	—	—	0	+
23	—	—	—	142	+	0.6	5	....	..	—	—	—	36	+
24	+	+	+	50	+	0.6	2	....	..	—	—	—	21	+
25	+	+	+	94	+	0.6	9	....	..	+	—	—	36	+

EFFECT IN TABES SOMETIMES OCCURRING AFTER ONE INJECTION OF SALVARSAN

No. of Example	Serum, Wassermann	Cerebrospinal Fluid Wassermann	Cerebrospinal Fluid Globulin Excess	Cerebrospinal Fluid No. Cells	Reduction of Fehl'g's Solution	Salvarsan, Gm.	Number of Doses	Neosalvarsan	Number of Doses	Serum Wassermann	Cerebrospinal Wassermann Fluid	Cerebrospinal Fluid Globulin Excess	Cerebrospinal Fluid No. Cells	Reduction of Fehling's Solution
1	+	+	+	135	+	0.6	1	...	..	—	—	—	26	+
2	—	—	—	33	+	0.6	1	....	..	—	—	—	9	+
3	+	—	—	253	+	0.6	1	....	..	+	—	+	59	+
4	+	+	+	128	+	0.6	1	....	..	—	—	—	60	+

MOTOR-TRACT DISEASE

Turning now from diseases in which the virus of syphilis has wrought greatest havoc on the sensory tracts, let us consider the possibilities in dealing with those whose symptoms are chiefly dependent on disturbance of the motor paths. While the disabling of motor paths, for example, ptosis or diplopia, is in the majority of instances the first symptom that strikingly calls the patient's attention to the late effects of syphilis, there can be little doubt that the earliest inroads are made on the sensory tracts. It is usually possible to elicit from an intelligent patient the appearance of subjective sensory disturbances previous to the occurrence of motor symptoms. This opinion, which is now held by most neurologists, has recently been reaffirmed by Holmes[6] in an article on tabes.

In those cases, fortunately relatively fewer, in which the motor system bears the brunt of the attack of the virus of syphilis, the results of antisyphilitic therapy are usually less fortunate than those obtained in disease of the sensory system. There is apparently no means of prognosticating the result either from the clinical picture or from the Wassermann reaction, especially when the myelitis produces a spastic paraplegia or an Erb paralysis. Paralyses resulting from involvement of the third, fourth or sixth cranial nerve *yield more readily to salvarsan, especially if of recent* origin. Although the results of many of the spastic paraplegias due to syphilis are not all that we could wish, there is a sufficient number of recoveries which approximate the normal to justify pushing this form of therapy in all such cases at least to the point of rendering the reaction negative. As examples of this class, the reports of two similar cases follow. One patient recovered, the other *did not*.

Case 18.—E. F., woman, aged 36, married. Complaint: Unable to walk or stand; absolutely no control of bowels or bladder, diplopia on looking downward, cord-like tightness around the abdomen. Duration eleven weeks. No knowledge of infection. Two children died in first year of life, three living.

Examination.—Cannot stand, cannot move her lower extremities at all as she lies in bed; entirely incontinent. moderate incoordination of both upper extremities. Knee and ankle reflexes plus, double Babinski, double ankle clonus, abdominal and epigastric reflexes absent, normal in the arms; left palpebral aperture narrowed, eye turns slightly outward in looking down. Right pupil rigid to light, left small but responds. Fundi normal. Belt of hypesthesia from sixth to twelfth dorsal segment distribution. Wassermann serum negative; cerebrospinal fluid negative; globulin positive; mononuclear cells 80.

Treatment.—Neosalvarsan, 0.9 gm., every second day for four doses, and massage. Four weeks later neosalvarsan, 0.9 gm., two doses within a week. Fifteen months later patient had gained 40 pounds in weight, going about doing the housework; walks without support with slight wavering, but securely; has no incontinence, no diplopia, no pain, no paresthesia.

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[6] Holmes, Gordon: The Diagnosis of Tabes Dorsalis, Brit. Med. Jour., March 14, 1914, p. 573.

Examination.—This reveals the tendon reflexes still plus, double Babinski, left exhaustible ankle clonus. Pupils unchanged. Wassermann serum negative; cerebrospinal fluid negative; globulin negative; no cells.

Case 19.—W. S., man, aged 41, married. Complaint: Legs are weak and shaky; legs jerk up in bed; pain about the waist; impotent; not incontinent. Duration six months, much worse recently. Chancre fourteen years ago, also secondary rash. Treatment for three years with mercury and iodid.

Examination.—Sways in Romberg position; walks stiff leggedly scraping toes; knee reflexes plus; double ankle and patellar clonus; double Babinski; epigastric reflexes absent; abdominals and cremasterics sluggish; pupils unequal but respond to light and accommodation. No demonstrable sensory disturbance. Mental examination negative. Wassermann serum negative; cerebrospinal fluid negative; globulin negative; mononuclear cells 103.

Treatment.—Neosalvarsan, 0.9 gm., four doses a week apart. Three months later neosalvarsan, 0.9 gm., three doses in three weeks. Seventeen months later patient is still markedly spastic in his gait and the physical signs if changed are more pronounced. Wassermann serum negative; cerebrospinal fluid negative; globulin negative; no cells.

These two cases exhibit the capriciousness of results in treating syphilitic diseases of the motor tracts. If inclined to offer a favorable prognosis, one would probably have selected the case with the active exudative reaction in the central nervous system.

This type of case, which is almost an entity in itself, usually offers the most stubborn resistance to treatment, and in that respect differs radically from the usual forms of cerebrospinal syphilis.

CEREBROSPINAL SYPHILIS

The rapidity with which the ordinary types of cerebrospinal syphilis, including meningo-encephalitis and meningomyelitis, respond to salvarsan is very gratifying. Headaches, somatic pains, mild palsies, paresthesias, sluggish motor responses and similar manifestations, as a usual thing, yield in a comparatively short time to treatment with salvarsan. A few examples are more eloquent than much comment. Suffice it to say that similar results could not be accomplished without months of treatment, if at all, under mercurial therapy.

Case 20.—P. H., man, aged 35, widower. Complaint: Inability to work because of stiffness in the left knee, which disappears to a degree after working it back and forth; lack of prompt response in movements of the left foot; catching of the heel on the ground; difficulty in going up and down stairs; "creeping feeling" in the left hand and elbow. Duration two years, getting worse. Chancre two and one-half years previous.

Examination.—Station normal, no noticeable defect in gait, fine tremor of the hands. Knee and ankle reflexes exaggerated, left more than the right. Babinski on the left, left ankle and patellar clonus, left epigastric and abdominal reflexes diminished right plus, pupils equal and respond promptly to light. Wassermann serum positive; fluid negative; globulin positive; mononuclear cells 26.

Treatment.—Salvarsan, 0.6 gm., three doses about a month apart. Two months after the last treatment patient was working steadily as an inspector of plumbing and had no difficulty or complaint of any description, except a slight stiffness of the left knee on arising. Wassermann serum negative; cerebrospinal fluid negative; globulin negative; no cells.

Case 21.—N. V., man, aged 30, single. Complaint: Dizziness, intermittent headache, vomiting in the morning, nausea during the day, feeling of uncertainty when on his feet, occasional blurring of vision, pain in the stomach. Duration four months, steadily worse. Chancre six years before.

Examination.—Station and gait normal, occasional general tremor, slight occasional choreiform movement of shoulders and arms, reflexes sluggish; on reinforcement the right knee-reflex is greater than the left; right ankle-jerk present, left absent; right pupil reacts to light; old scar on left cornea due to trauma; vision of right eye normal. Wassermann serum positive; cerebrospinal fluid positive; globulin positive; mononuclear cells 915.

Treatment.—Salvarsan, 0.6 gm., three doses a week apart. One month after last injection his symptoms had entirely disappeared. Wassermann serum positive; globulin negative; cells 30.

He then received weekly injections of 10 minims of salicylate of mercury intramuscularly and after two months was still quite well. Wassermann serum negative; cerebrospinal fluid negative; globulin negative; cells 13. The tremor and the jerky movements have disappeared. Reflexes remain the same.

Case 22.—W. K., man, aged 26, single. Complaint: Headache; insomnia; twitching of the left side of the mouth, left shoulder and left side of the body; occasional vomiting; completely unable to speak four days ago. Duration three months; progressive. Chancre four months ago.

Examination.—Very slight paresis of right facial nerve, reflexes all present and equal, pupils equal, not quite round, respond promptly to light and in accommodation; station, gait and remainder of physical examination normal.

Mental examination showed marked defects in orientation, memory and attention. Speech somewhat indistinct. Wassermann serum positive; cerebrospinal fluid positive; globulin positive; mononuclear cells 533, polynuclear cells 13.

Treatment.—Neosalvarsan, 0.9 gm., five doses within three weeks. Two months later neosalvarsan, 0.9 gm., two doses three days apart. At the end of that time, ten weeks after the initial examination, no physical abnormality and his mentality has cleared entirely. No speech disorder. Wassermann serum negative; cerebrospinal fluid negative; globulin positive; mononuclear cells 16.

SYPHILITIC MASS FORMATION

Gummata of the brain, cord or meninges are much less common than was formerly supposed. Modern laboratory and therapeutic methods have disclosed the fact that conditions which would formerly, doubtless, have been diagnosed as gumma, must come under the head of cerebrospinal syphilis with a pronounced cellular exudate. This may take the form of a meningo-encephalitis or meningomyelitis giving rise to localized symptoms. The rarity of cases in which a diagnosis of gumma in the central nervous system is beyond the pale of dispute makes our experience with salvarsan in their treatment too inconsiderable to be of value in drawing conclusions.

NEURASTHENIC TYPE

There is still another class of syphilitic cases in which the patients show no gross lesion of the nervous system or other viscera, but complain of vague inconstant neurasthenic symptoms which are often called functional.

Many such, beyond doubt, have been treated as functional or neurasthenic even by the ablest hands. In such cases, when there is no knowledge of infection, one is justified in making a therapeutic test on the evidence furnished by a Wassermann reaction repeatedly positive. These cases are rather more frequent than one would suspect, and after observing the relief which comes to the patients after their blood has been sterilized by salvarsan, one regrets that not all neurasthenics can be so definitely and promptly cured.

INHERITED SYPHILITIC NERVOUS DISEASE

We have yet to appreciate fully the ultimate effects of syphilis on the offspring. Doubtless a considerable percentage of the hosts of mentally backward children have had their central nervous systems impaired *in utero* by the vicious toxins of the *Spirochaeta pallida*. We have under treatment a number of such children exhibiting positive Wassermann reactions, but the time is not yet ripe for an expression of opinion as to the value of therapy.

Another dreadful manifestation of syphilis in the parent is epilepsy in the child. By this is not meant the jacksonian movements which may characterize cerebrospinal syphilis in the exudative stage, but generalized convulsions in a child whose cerebrospinal fluid is normal, but whose blood and that of the mother returns a positive Wassermann. Such cases are comparatively rare, and it is very difficult to make the Wassermann reaction negative. Under salvarsan treatment the number of attacks becomes greatly diminished and in some instances ceases altogether.

GENERAL PARESIS

The tendency of the *Spirochaeta pallida* to lodge in hordes in the non-vascular regions of the cerebral cortex does not augur particularly well for the treatment of general paresis. It is not surprising, then, that the percentage of cures and even cases of arrested progress is very small. Not infrequently a case of paresis will show improvement under salvarsan treatment for a greater or less period, but eventually exhibit progressive deterioration. In this condition the Wassermann reaction in the serum and spinal fluid is extremely resistant and in only a comparatively few cases have we been able to influence it permanently. We can but devoutly hope that the method of subdural salvarsan therapy employed by Swift and Ellis[7] may be a boon to the general paretic. But inasmuch as it has been demonstrated by Kramer[8] that the subdural space around the cerebral cortex is not continuous with that below the tentorium cerebelli and around the spinal cord, any fluid introduced into the subdural space around the cord will not arrive at the cerebral cortex except by way of the central canal of the cord and the ventricle, or after being taken up by the general vascular system. The outlook is therefore not encouraging. The report of a case in which the deteriorating process was arrested may prove interesting:

TABLE 3.—EFFECT OF TREATMENT IN CASE 23 CHRONOLOGICALLY CONSIDERED

Date	Serum Wassermann	Fluid Wassermann	Globulin Excess	Mononuclear Cells	Salvarsan, Gm.
4/19/12...	+	+	+	27	0.3
5/ 9/12	..	..	..	..	0.3
5/11/12	..	..	..	..	0.3
5/14/12	..	..	..	..	0.3
5/31/12	+	+	+	19	0.6
6/ 5/12	..	..	..	..	0.3
6/11/12	..	..	..	..	0.6
7/12/12	—	+	+	3	0.6
7/18/12	..	..	..	..	0.6
7/25/12	..	..	..	..	0.6
7/27/12	+	+	+	10	...
12/27/12	+	+	—	13	...
1/ 7/13	—	—	—	5	...
2/28/13	+	+	+	8	...
6/10/13	—	+	—	13	0.6
12/11/13	+	+	+	5	0.6
12/19/13	..	..	..	..	0.6
1/ 9/14	+	—	—	6	0.6
1/14/14	+	..	..	..	...

Case 23.—W. M., man, aged 31, single. Complaint (by his mother): Memory failing; low-spirited, irritable; unable to remain at one task; shaking of the hands; speaks so indistinctly that he can with difficulty be understood. Patient states that he talks as well as he ever did and "feels fine." Duration six weeks; progressive. Chancre seven years before with rash and sore throat.

Examination.—Station secure, gait hesitating; marked tremor of the lips, tongue and hands; no hypotonus, slight incoordination; absent knee- and ankle-jerks; plantar flexion, plus abdominal, epigastric and cremasteric reflexes; unequal pupils, rigid to light; tremulous, hesitating speech; sits alone in a depressed attitude; when he is addressed smiles blandly and says he "feels fine." When aroused ascends into a euphoric state; insight fair, memory, orientation and attention good. The treatment and its effect on the Wassermann reaction are given in Table 3.

To-day he is a pleasant, agreeable, rather jovial person, with good sense of humor and of normal conduct. He is a constant reader and relates the details of a story which he has read. His memory and insight are excellent. His attention is good but in the midst of a complexity of duties he becomes easily excited. Gaged by the Binet-Simon tests his mental age is 12 years. His tremors have disappeared and his speech, though slightly hesitating, is clear and distinct. Pupils and reflexes remain unchanged. Although he has not attempted to resume his work as a stenographer, he is industrious about the care of his house and grounds.

From Table 4 is evident the high resistance of the Wassermann reaction both in the serum and in the cerebrospinal fluid in the majority of cases of general paresis.

THE PROVOCATIVE DOSE

Certain persons seem to arrive at such a state of tolerance for the syphilitic parasite that the tissues no longer give chemical evidence of active resistance to the invader. Salvarsan is often of value in arousing the latent capabilities of the body-cells and may be employed to advantage in the doubtful cases as a diagnostic measure. Untreated cases with suspicious symptoms, which are luetic, presenting a negative Wassermann reaction, may have this changed to a positive reaction by a single small injection of salvarsan. The blood should be drawn from one to three days after the injection.

PLAN OF THERAPY

While salvarsan has proved our most rapid and most efficient agent in treating syphilitic nervous disease, the use of mercury, preferably intramuscularly, in the interval between doses of salvarsan, has proved highly desirable. The salicylate in a purified petroleum oil suspension has been chiefly employed by us.

It is probable that the intermittent treatment will prove advantageous. By this is meant a succession of periods of treatment and periods of rest, each covering a number of weeks. The spirochete is thus not rendered immune or less sensitive to the specific therapy as may occur when treatment is continuous. The great drawback to this plan is losing sight of the patient, whose interest may wane.

In our enthusiasm in attempting to render the Wassermann reaction negative, we must not forget that we are treating the patient, not the condition of his serum. Besides the directly antisyphilitic remedies, all adjuvant measures possible must be employed, including systematic exercise in the open air, Fränkel exercises when necessary, tonic baths, various forms of electricity, massage, the cautery when indicated and a simple nutritive diet. But in observing the progress of therapy and the decadence of the syphilitic process, the Wassermann reaction and the cell count are our most enlightening guides, and without them we are in the dark. Improvement in symptoms nearly always follows *pari passu* with improvement in this.

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[7] Swift and Ellis: New York Med. Jour., 1912, xcvi, 53.
[8] Kramer: New York Med. Jour., March 16, 1912.

From a continuous study and review of the work of the past four years we submit the following conclusions, which differ in no essential from those expressed in a report by this service on the same subject two years ago.[9]

CONCLUSIONS

1. The treatment of syphilitic nervous diseases without the Wassermann reaction and spinal fluid analysis is guess-work.
2. The nervous system may be the site of attack within a few weeks after the initial lesion appears.
3. The earlier antisyphilitic treatment is instituted in syphilitic nervous diseases, the greater the probability of complete recovery.
4. Salvarsan is the most potent remedy in our armamentarium in the treatment of syphilis of the nervous system.
5. Salvarsan is not all-sufficient.
6. One or two doses are not usually sufficient to effect a cure, but may check the disease for a time.
7. Syphilitic nervous diseases improve most when salvarsan therapy is combined with mercurial treatment and general tonic measures.
8. Therapy should be continued until the serology is negative if possible.
9. The serology should be examined periodically after a negative status has been achieved.

149 East Sixty-Seventh Street.

TABLE 4.—HIGH RESISTANCE OF WASSERMANN REACTION IN GENERAL PARESIS

GENERAL PARESIS

No. of Example	Serum, Wassermann	Cerebrospinal Fluid Wassermann	Cerebrospinal Fluid Globulin	Cerebrospinal Fluid No. Cells	Fehl'g's Reduction	Salvarsan, Gm.	No. Doses	Neosalvarsan, Gm.	No. Doses	Serum, Wassermann	Cerebrospinal Fluid Wassermann	Cerebrospinal Fluid Globulin	Cerebrospinal Fluid No. Cells	Fehl'g's Reduction
1	—	+	+	130	+	0.6	8	....	..	—	+	+	3	+
2	+	+	+	15	+	0.6	4	0.9	4	—	—	—	16	+
3	+	+	+	109	+	0.6 0.3	1 1	0.45	1	+	+	+	24	+
4	+	+	+	192	+	0.6	2	0 45	5	—	+	+	8	+
5	+	+	+	116	+	0.6	4	. .	. .	+	+	+	120	+
6	+	+	—	0	+	...	..	0 9	3	+	+	—	0	+
7	+	+	—	27	+	...	..	0.9	3	+	+	—	20	+
8	+	+	+	35	+	...	..	0.9	5	—	+	—	0	+
9	+	+	+	107	+	...	..	0 9	6	+	+	—	48	+
10	+	+	+	151	+	0 6	2	0.9	2	+	+	+	32	+
11	+	+	—	270	+	0.6	4	....	.	+	+	+	146	+
12	+	—	+	121	+	0.6	4	....	.	+	—	+	65	+

CEREBROSPINAL SYPHILIS

No. of Example	Serum, Wassermann	Cerebrospinal Fluid Wassermann	Cerebrospinal Fluid Globulin	Cerebrospinal Fluid No. Cells	Fehl'g's Reduction	Salvarsan, Gm.	No. Doses	Neosalvarsan, Gm.	No. Doses	Serum, Wassermann	Cerebrospinal Fluid Wassermann	Cerebrospinal Fluid Globulin	Cerebrospinal Fluid No. Cells	Fehl'g's Reduction
1	+	—	+	26	+	0 6	3	....	..	—	—	—	0	+
2	+	+	+	915	+	0.6	5	....	..	+	+	+	15	+
3	+	+	+	91	+	0.6 0.3	1 2	0.45	6	—	+	—	14	+
4	+	+	+	548	+	0.6	1	0.9	7	—	—	—	12	+
5	+	+	+	930	+	0.6	8	....	..	—	—	—	26	+

[illegible]

CASE OF POISONING BY SCOPOLAMIN (HYOSCIN) HYPOBROMATE

Mervin Tubman Sudler, Ph.D., M.D., Rosedale, Kan.
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May 28, 1913, in the forenoon, W. R. P., man, aged 21, consulted an oculist, who discovered that he had no homatropin to use in the examination. Calling by telephone a local drug-store, he ordered some powders, each to contain ½ grain of homatropin. The messenger appeared shortly with an envelope containing the supposed powders of homatropin. The oculist immediately made a solution by dissolving one of the powders in thirty drops of distilled water (a method used by him for obtaining approximately 1 c.c.), omitting to read the label, which was small and inconspicuous. The label read "hyoscin hypobromate, grs. ½." The patient then lay on a couch and 3 drops of the solution were dropped in each eye, so that about 1/10 grain of scopolamin (hyoscin) hypobromate was administered in this way. In a few minutes he complained of dizziness. While he managed to stagger to a chair, he immediately threw himself back on the couch on account of his sensation of dizziness and faintness. His pulse at this time was beating at the rate of 150 a minute, and at times it was too indistinct to be counted. He was actively delirious, having delusions of playing baseball—from his conversation apparently with much interest. He was closely watched and received 1/30 grain of strychnin hypodermically. No other medication was employed. His condition gradually improved, so that by 4:30 o'clock his pulse was reduced to 110 and was stronger. He was then removed to the hospital. He was still delirious and seemed to realize that he was talking irrationally, but said that he was unable to control it. By 7 o'clock his pulse was 86, his respiration 18, his temperature 99.4, and he was practically rational. On the following day, at which time I first saw him, his pulse varied from 60 to 86 and his temperature reached 99.2. No trace of his mental confusion remained. He left the hospital on the third day. While he has worried somewhat about himself since the occurrence, there is no evidence that any permanent injury has resulted from his large dose of scopolamin hypobromate.

Early Specialization.—The Egyptians were right in neglecting the general calling of a physician and of dividing the profession.—Montaigne.

REPORT OF A CASE OF PELLAGRA WITH LATE SKIN LESIONS

Thompson Frazer, M.D., Asheville, N. C.

It has been frequently observed that the skin-lesions of pellagra, although having given the disease its name, are by no means necessarily, or even commonly, the first symptoms to appear. It is perhaps less generally known that symptoms referable to other organs may persist for such a long period without the development of the dermatitis that one may be entirely put off the scent if one depends on this symptom alone. I cannot better lay stress on this feature of pellagra than by briefly reporting a case recently seen by me in which the late appearance of the skin-symptoms was no less than tragic.

Mrs. X., a woman of 30, living in a neighboring mountain town, married and the mother of five children, had always been well until shortly after the birth of the last one, a seven-months' child, born July 1, 1913, and living only a few days. The puerperium presented no unusual features and the patient remained well until about a month after delivery. About this time she noted that her strength was not quite up to par, and the appetite, hitherto good, became capricious and soon vanished almost completely. Associated symptoms were an intense nausea, with vomiting, repeated several times daily, and persisting for three or four months. Pain and burning in the stomach were early and distressing symptoms. Following in the wake of these "dyspeptic" symptoms, there appeared a diarrhea, at first mild, but soon attaining considerable proportions. The diarrhea, with movements varying from ten to twenty daily, persisted until March, 1914. The patient, as a result of this drain, became weaker and weaker, yet still attempted to keep about and to attend to her household duties. During this period she was seen by several physicians and was treated by them for "stomach-trouble," "intestinal catarrh" and "consumption of the bowels," with but little improvement. About the middle of March, 1914, the patient became more acutely ill, suffering with extreme nervousness, a recurrence of the vomiting, severe burning in the stomach, and a sore mouth and tongue, accompanied with profuse salivation. She was so sick that she was compelled to take to her bed. At the same time there appeared on the backs of the hands and forearms a symmetrical erythema resembling sunburn, which blistered and later scaled. The patient has been in bed continuously since the acute attack.

I saw her for the first time, May 15, 1914. In the course of the two months which she has spent in bed the diarrhea has improved so that she has only two movements daily, the nausea and vomiting have disappeared and the appetite has partly returned. The chief complaints are the burning pain in the feet and the cramps in the calves of the legs, both so severe that she is unable to get much sleep, the loss of which adds greatly to her already exhausted condition. While the sore mouth has improved, the salivation is profuse and the patient is almost continuously wiping the saliva from the lips and chin, which have become excoriated as a result of the constant discharge. On the backs of the hands and forearms is a symmetrical, rather sharply defined dermatitis, with scaling still going on. Both elbows are ichthyotic in their roughness. Emaciation is extreme; the eyeballs are sunken in their sockets; the face is drawn, the expression set and anxious, while speech is slow and attended with much difficulty on account of both the salivation and the mental and physical exhaustion. Sleeplessness, made worse by pains in the legs and feet, has intensified the prostration to such a degree that the patient is unable to sit up in bed without fainting. Mental symptoms, such as loss of memory and "flightiness," are present, but the patient makes the attempt to appear cheerful in spite of the feeling of apprehension which she is unable to throw off.

The main features of the case, then, are as follows: Here is a woman evidently suffering with pellagra, confined to bed for over two months, and requiring the constant attendance of a nurse, so extreme is the prostration. And yet for over seven months prior to the advent of the dermatitis and other frankly pellagrous symptoms, there was nothing in her history which even remotely suggested pellagra to the physicians in charge of the case, so that the patient was allowed to be about and had greatly exhausted her strength before pellagra showed itself in its true colors. The lesson to be learned from this case is that the physician must not wait for the dermatitis before suspecting, at least, the existence of pellagra; and an evident corollary is that in pellagrous areas a long-continued attack of "stomach and bowel trouble" must be regarded as cause for alarm. It is hoped that this brief case-report will bring out the point which I wish to emphasize, namely, that pellagra may exist for a long period—months and possibly years—before the characteristic dermatitis makes its appearance. In this instance it was probably the pregnant state which awoke a latent pellagra, and the premature birth was in all probability the result of pellagrous infection.

Therapeutics

TETANUS

Statistics are constantly impressing us with the facts: (1) that tetanus is preventable; (2) that frequently it can be stopped after it has developed; (3) that it may be cured after it has become well established. Consequently, it should never be considered absolutely incurable.

PREVENTIVE TREATMENT

The most successful preventive treatment and practically the only successful one after the disease has developed is by tetanus antitoxin. As a preventive, this antitoxin ranks even ahead of diphtheria antitoxin; therapeutically, it is far inferior, because part of the toxin produced by the tetanus bacilli forms a combination with the nerve-cells of the spinal cord. The greater portion of the toxin seems to circulate in the blood, but a small part is absorbed by way of the lymph-vessels and passes to the spinal cord by means of the nerve trunks.

One of the greatest dangers from this terrible infection is that the local lesion *may not* show signs of disturbance when the central nervous system suddenly gives indications of poisoning. The kinds of wounds likely to contain the tetanus bacillus, however, are positively known. These are: all wounds that may contain dirt contaminated by manure, such as that from streets, stables or barns and even fields; wounds by firecrackers; by gunshots, especially with blank cartridges; by crushing, in machinery or otherwise. The feet and hands are especially prone to be infected with tetanus germs. Street injuries that are not deep or perforating, but grinding and lacerating, are very likely to cause tetanus infection. Also, it has been stated that tetanus bacilli may be harbored in an old injury, yet cause no symptoms until some other injury or general disturbance of the body has caused the normal protection against infection to be broken down; then toxins from the bacilli may be absorbed and tetanic symptoms develop. This would account for some otherwise apparently unaccountable developments of tetanus.

DRESSING THE WOUND

The corollary to the preceding statement is that in every case of injury, whenever the wound may have been contaminated by street dirt or by objects that have been exposed to street or barn dust, first, all foreign matter should be removed from the wound, even if to do so it becomes necessary to cut down on a penetrating wound under anesthesia; secondly, not the open wound alone, but the surrounding tissues as well should be painted with tincture of iodin, then the wound should be dressed with some antiseptic dressing, of which a strong alcohol wet dressing is, perhaps, as good as any; thirdly, the patient should be given immediately an injection of 1,500 units of tetanus antitoxin.

Various antiseptic soaps, washes and solutions have been and may be used in cleansing the wound and dressing the injured part. It should be remembered that, if the tincture of iodin is used, its germicidal action is greater the drier the parts are and the less they have been bathed with solutions.

It should be emphasized that statistics, from both Europe and the United States, compiled from repeated observations by careful surgeons and clinicians, indicate that it is almost inexcusable not to give a patient, who has suffered one of the above-mentioned injuries, or who has been known to have had an injured part contaminated with a possibly infected dirt, the preventive dose of tetanus antitoxin.

Antitetanic powders have been prepared with antiseptics, and although, experimentally, their use has been successful in preventing the development or absorption of tetanus toxins, still it has not been shown that the results were not accidentally successful because of the strong antiseptic that was combined with the antitoxin powder. It might, however, be well to apply antitetanic serum to the open wound at the same time that the preventive subcutaneous injection is given.

According to investigations, the immunity caused by the antitetanic injection does not seem to last more than from two to three weeks, but this is generally long enough to prevent the development of the infection from any particular injury.

ANAPHYLACTIC SYMPTOMS

The usual reaction which takes place from the injection of any horse-serum may occur, that is, anaphylactic symptoms, but these are rarely severe, and are shown mostly by slightly increased temperature, and light urticarial eruptions with some itching. When a number of injections must be made in the treatment of tetanus, there is, of course, sooner or later, greater liability of serum reaction. In some instances it has been found that hypodermatic injections of atropin sulphate have prevented some of the symptoms.[1] As atropin alone may cause, through irritation of the skin, a scarlatiniform eruption, it seems rather surprising to find atropin successful in preventing symptoms of anaphylaxis. It should be remembered that, in hay-fever or asthmatic patients, as serious poisoning may occur with this horse-serum as in the use of diphtheria antitoxin. Therefore, before using antitetanic serum as a preventive of the disease, it should be carefully ascertained whether or not the patient is susceptible to horse emanations.

If the first symptoms of tetanus are in evidence, that is, if the disease is about to develop, or has developed, it may be aborted by the immediate injection of from 5,000 to 10,000 units of antitetanic serum, best administered intravenously. It may also be well, within a few hours, to give in addition 5,000 units subcutaneously. If the symptoms are well developed, or the patient shows severe poisoning, from 10,000 to 20,000 units should be immediately given intravenously, and in ten or twelve hours 3,000 to 5,000 units subcutaneously, provided the symptoms have not markedly ameliorated. In twenty-four hours the same subcutaneous dose may be repeated. A more effective treatment, however, is gently to inject 5,000 units into the spinal canal, if the intravenous injection has not ameliorated the symptoms in a few hours. This seems to be the most effective means of combating the action of the toxins on the spinal nerve-cells. In fact, it has been proved that the toxin in these nerve-cells cannot well be combated by antitoxin in the blood-stream, but that it can be when the antitoxin is injected into the spinal canal.[2]

Even if the symptoms have markedly ameliorated, if any signs such as muscle stiffening, show that the disease is continuing, a smaller injection may be given subcutaneously once or twice in twenty-four hours for several days.

DOSAGE OF ANTITOXIN

The amount of the antitoxin that may be used without causing harmful symptoms seems to be without any narrow limit; several thousand units may be administered every few hours, if it seems advisable, and 20,000 to 30,000 units intravenously. Many thousand units may be given during the course of the disease with only good results.

Finally, each physician and surgeon should seriously consider the advisability either of using a prophylactic dose of tetanus antitoxin serum in every injury of the character described; or, if his patient, or the patient's family refuses to allow such an injection to be given, of securing a signed release from responsibility or blame should tetanus later develop.

Jan. 13, 1912, p. 104.

[2] See The Serum Treatment of Tetanus, editorial, The Journal A. M. A., April 11, 1914, p. 1174.

Carious Teeth.—Statistics of the London County Council show percentages of carious teeth among schoolchildren are as follows: Entrants (that is, very young children), boys 10.3, girls 10.1; children between 8 and 9, boys 17, girls 16.5; between 11 and 12, boys 12.9, girls 11.8. The increase during what may be described middle school age is ascribed to the fact that the milk-teeth are then being changed for the permanent. An attempt is made to classify the percentages of bad teeth according to social condition. About 39 per cent. of the children from well-to-do homes have defective teeth, as against 27 per cent. from very poor homes. This is accounted for by the fact that the coarser food eaten by the poorer children gives their teeth more work, and hence keeps them clean and strong. It is also suggested that the poor are able to give their children fewer sweets, and only those of the cheap or boiled-sugar variety. These sweets break up clean in the mouth, whereas the caramels and chocolates eaten by better-off boys and girls tend to cling round the teeth and form a nidus of fermentation. Writing on this subject, Dr. Sims Wallace, late dental surgeon to the London Hospital, states that there are in this country about 21,000,000 teeth in a state of ruin through eating sweets, and urges the adoption of a diet containing farinaceous food in a form which will stimulate mastication, as brown bread, and also the eating of fresh fruit at the conclusion of a meal. By means of the fruit the teeth are cleansed. The best fruit for this purpose is probably the apple, which, if eaten at the end of a meal, leaves the mouth fresh and physiologically clean.

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SATURDAY, JUNE 20, 1914

THE TRANSMISSION OF TYPHUS FEVER

In September, 1909, Nicolle, Comte and Conseil[1] reported the successful transmission of typhus fever from one monkey to two others by means of the bite of the body-louse (*Pediculus vestimenti*). In their report they showed that body-lice that had fed on an infected monkey were able to convey typhus fever some time between the first and the seventh day thereafter.

Independently of Nicolle and his co-workers, Anderson and Goldberger,[2] in their studies on typhus fever in Mexico in November, 1909, reported two attempts to transmit Mexican typhus from man to the monkey by means of the bite of the body-louse. In one of their experiments the monkey showed a slight elevation of temperature eight days after the last exposure to the bites of the infected lice, but they stated that circumstances made it impossible to test the immunity of this animal. In view of later studies by them and by others, they concluded that it was very probable that the elevation of temperature was due to infection with typhus.

Ricketts and Wilder,[3] also working on the Mexican typhus, reported in 1910 that they were able to transmit the virus of typhus fever by means of the bite of the body-louse from man to monkey and from monkey to monkey. They also reported the successful transmission of the typhus virus to the monkey by introducing into scarifications of the skin the abdominal contents of infected lice. They stated that, as a rule, in their louse experiments, the monkeys had no very significant temperature reaction and that proof of infection was dependent on immunity tests with virulent blood.

In 1911, Nicolle and Conseil,[4] continuing their work of two years previously, reported further successful experiments on the transmission of typhus to the monkey by means of the bite of infected body-lice.

Subsequently, in 1912, Anderson and Goldberger,[5] continuing their work on typhus in both the United States and Mexico, reported the successful transmission of both the Mexican and New York typhus by means of infected lice. They also reported the first evidence incriminating the head-louse (*Pediculus capitis*) as a possible agent in the transmission of typhus.

All the work above referred to on the transmission of typhus fever by means of the louse has been on the transmission of the disease to the monkey by means of body-lice that had fed either on infected monkeys or on human beings, and until recently no exact experiments had been reported on the transmission of the disease from man to man by means of the bite of infected lice. There are a number of instances in the literature which strongly suggest this possibility, but the evidence has not been conclusive. Sergent, Foley and Vialatte,[6] however, have recently reported the successful transmission of typhus to man and to the monkey by means of the body-louse and possibly also by means of the eggs from infected lice.

In one of their experiments about two hundred infected body-lice were allowed to feed daily on the authors and individuals who volunteered for this service. On the fourteenth day after the beginning of the feeding one of the subjects developed typhus fever. Lice taken from the individual, after being made into an emulsion, were used to inoculate a monkey which, after four days' incubation, developed typhus. Blood was drawn from this animal and used for the inoculation of a second monkey which, after an incubation period of seven days, developed typhus fever.

Sergent and his co-workers conclude that the mere bite of infected adult lice is sufficient to transmit typhus fever to man and that lice taken from a person so infected are infective for the monkey, by either subcutaneous or intraperitoneal inoculation of an emulsion of the ground-up lice. They maintain also that the inoculation of the eggs from infected lice will produce typhus fever when inoculated into man by slight scarification of the skin.

These experiments of Sergent seem conclusively to settle, by means of experiments on man, the rôle of the body-louse in the transmission of typhus fever. It is a matter of sincere congratulation that much of the recent advance in our knowledge of this once dreaded disease have been due to the work of American investigators, although the toll through the loss of life of two of the investigators — Ricketts and Goldberger — has been severe.

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6. Sergent, E.; Foley, H., and Vialatte, C.: Transmission à l'homme et au singe du typhus exanthématique par les poux d'un malade atteint de fièvre récurrente et par des lentes et poux issus des précédents, Compt. rend. Acad. d. sc., March 30, 1914, p. 964.

COLLEGIATE ATHLETIC SPORTS

One of the numerous criticisms aimed at college athletics, as practiced among most student bodies at present, relates to their failure to take into account the subsequent needs of the persons involved. To an unbiased observer it cannot fail to appear incongruous that a student should devote months or years to a peculiar sort of physical training, avowedly intended to improve his body and promote his physical well-being, only to find himself, on leaving the university, without any form of exercise or healthful recreation that can be followed during after-college life. Certainly the football hero or the member of the winning crew who has developed himself by special efforts into a muscular giant will find little chance to continue his training after graduation. The reaction from the physical stress of severe competitive intercollegiate athletics to the physical passivity of a sedentary occupation in the counting-house or the law chambers is one of the real hardships to which young men are yearly being inevitably consigned by the inconsistent and improper application in American colleges of a pernicious system of athletic rivalry that ought to be confined to professional athletes.

Wherein competitive sports, in their present abuse, fail to play the wholesome rôle that systematic bodily exercise and legitimate athletic performance should take in the life of young people has been discussed in THE JOURNAL.[1] In several respects our contentions are in accord with the findings and suggestions of a committee appointed by the National Collegiate Athletic Association to report on the encouragement of intracollegiate and recreative sports. As an outgrowth of the feeling that the present methods do not reach the mass of our students, and do not provide them with practical means for exercise and recreation in after-life, Drs. H. Shindle Wingert of the Ohio State University, Raymond G. Clapp of the University of Nebraska, and Charles E. Hammett of Northwestern University have made an investigation of the practices prevailing in one hundred and fifty collegiate institutions representative of all sizes, locations and degrees of athletic prominence. The undue prominence of the intercollegiate, that is, strenuously competitive, type of games is plainly emphasized. Among the 111,000 students of the institutions under consideration, 18,000 are associated with varsity teams as members or substitutes. From the vagueness of some reports, a definite statement cannot be made as to the number who take part in intramural games, but it appears to be about three times as many as in intercollegiate games. The money expended on intercollegiate sports in 150 colleges is reported as $1,090,000. In some cases, the amount reported is said to include expenditures also for intramural sports, the proportion not being given. This fact reduces somewhat the expenditure above indicated for intercollegiate sports, and makes it impossible to give the exact amount spent for intracollegiate activities. A reasonable inference, however, from the facts submitted would be that not one-tenth as much is spent for intramural as for intercollegiate games.

Despite the fact that the actual numbers participating in intracollegiate sports is about three times greater than those of the more conspicuous group of selected athletes, it is very clear to one who studies the returns from the colleges that only a small fraction of the *money spent on intercollegiate games is used to promote* general student athletic activities. Surely if the money of the athletic treasury is to be expended for the physical welfare of the general student body rather than for the staging of a few exciting contests which arouse partisan enthusiasm instead of promoting the physique of the great majority of those concerned, the contribution to the athletic "show" seems unduly prominent. It appears that on intercollegiate sports the large institutions spend the most money per athlete (about $60), but the least per student (about $8), the figures for the medium-sized institutions and the small institutions being respectively $50 and $40 per athlete, and $12 and $13 per student.

After making due allowance for the necessarily approximate character of the reports, the committee is convinced that not more than 50 per cent. of the students in college engage in any form of systematic or organized exercise. It feels, moreover, though it has no way of determining to what extent, that 50 per cent. is decidedly too high a proportion. The committee calls attention to the necessarily unsystematic and sporadic character of the exercises as participated in by the non-university students. Exercise in any form can be of little value unless taken systematically and regularly. Out of 143 colleges, 53, or 37 per cent., are doing nothing to foster and encourage the types of physical exercise and healthful recreation that the student is likely to use in after-college life; 53 per cent. try to create a love of sport by using different games, such as baseball, handball, volley ball, tennis and golf; 21 per cent. give corrective exercises; 14 per cent. give hygienic lectures; 5 per cent. require swimming; 5 per cent. have "hikes," and two colleges teach dancing.

The experts of the National Collegiate Athletic Association believe that intracollegiate sport and recreation should be planned with the constant purpose in view of usefulness in after-life. They are inclined to believe that the conditions revealed by their investigations are due primarily to the lack of appreciation by college authorities and faculties of the vital need of systematic organized instruction in intracollegiate and recreational sports and hygiene. We are impelled, however, to believe that it is not so much the indifference of collegiate authorities as the dominance of competitive intercollegiate athletics which is responsible for the relative indifference to physical exercise in the very communities in which its value is being taught by lectures and text-books. The glorification of an overtrained few means their sacrifice in many instances and the diversion of interest from more wholesome but less spectacular sports. As the committee referred to has concluded, the student should be furnished with such ideas of rational exercise and hygiene as will enable him to adapt his habits of exercise and modes of living to changing conditions in after-life; that is, he should be trained to think and act of his own initiative in these matters. Some games and exercises can be participated in as intracollegiate sports and can be continued in after-life. Tennis appeals to great numbers in everyday life, but only 65 per cent. of the colleges afford the comparatively inexpensive equipment of courts. Baseball requires little equipment; every fairly well-equipped gymnasium can have a swimming pool and each student should be taught to swim. Social dancing and bowling are especially fitted to the opportunities of after-life. Fencing, wrestling, boxing, Indian club exercises and calisthenics, if made interesting and rightly taught, are of substantial value after college; walking and "hiking" can always be indulged in. A period of reconstruction in the whole domain of collegiate athletics is approaching.

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[1] See editorials, THE JOURNAL A. M. A., Athletic Sports in Relation to Health, March 21, 1913, p. 936; Athletic Sports versus Competitive Athletics, April 4, 1914, p. 1094; The Hygiene of Athletic Sports—Rowing, April 11, 1913, p. 1172.

THE HEMOLYMPH-GLANDS

For many years various glandular structures have been classed together as lymphatic tissues, in the belief that they are essentially and fundamentally related to each other. The spleen, for example, in many respects resembles a lymphatic gland. Just as in the latter the cellular elements of the tissues are bathed by the lymph which flows through the gland, so in the spleen the blood is poured out into the interstices of the tissue. Thus the malpighian bodies of the spleen are believed to correspond to the follicles of lymph-glands; and it is frequently stated that after splenectomy a compensatory hyperplasia of the other lymph-glands usually occurs. Spleen and lymph-glands alike are assumed to be concerned in the resistance to infection, in the processes of hemolysis and phagocytosis, and in the pathologic hyperplasias and metaplasias.

The name "hemolymph-glands" has been given to another group of related structures about which there has been much difference of opinion. Found in the thoracic and abdominal aggregations of glandular lymphatic structures, they are commonly believed to be specialized to deal with red cells as well as lymphocytes originating in the more typical lymph-glands. In the hemolymph-nodes as ordinarily described, there are found, besides the ordinary lymph follicles, lymph sinuses and blood-vessels, a varying number of sinuses filled with red corpuscles, and Cabot, for example, has stated that in these glands the destruction of red corpuscles, especially in pathologic conditions such as infection and toxemia, is considerable. Whether or not they also take part under pathologic conditions in red cell formation has been disputed.

The general pathology of the hemolymph-nodes has hitherto been regarded as essentially the same as that of the lymphatic glands. Inflammation, syphilis, tuberculosis, the various retrograde changes, and secondary neoplasms are all said to be found in the nodes containing blood-sinuses. Little has been ascertained concerning their special pathology, presumably because of the assumption that no hard and fast line can be drawn between spleen, hemolymph-glands and ordinary lymph-glands. Almost a continuous series of transitional structures has been described, and among them the so-called "accessory spleens" have been depicted as a splenic reticulum so widened as to approximate the blood-sinus of a hemolymph-gland and with the malpighian bodies so diffuse as to resemble the lymphoid portion of the blood-lymph glands. The apparent impossibility of distinguishing in every case between these supposedly interrelated structures has been confirmed through the assertion that hemolymph-nodes can be produced experimentally through the stage of lymph-glands and even back again. The procedures undertaken to secure these changes or the formation of presumably compensatory accessory glands of the hemal type have included the removal of the spleen and injections of toxic substances.

Directly opposed to the foregoing points of view is the contention of a smaller number of investigators, that the true hemolymph-nodes have no connection whatever with the lymphatic system.[1] The solution of the problem is not easy, inasmuch as the lymphatic glands in general—even the peripheral accumulations—are subject to pronounced changes in color and consistency under relatively slight provocation. The histologic examinations to determine assumed changes must be painstaking and the preliminary conditions in some way controlled. In view of the conflicting testimony, Dr. Arthur W. Meyer[2] of the division of anatomy of the Department of Medicine at Leland Stanford, Jr., University has resumed the investigation of the hemal nodes, splenectomy being performed in most cases to provoke the presumed changes. It happens at times that color changes occur in the true lymph-nodes when they become hemorrhagic; but in no instance were hemolymph-nodes formed. As Meyer remarks, changes in lymph-nodes following various influences, of course, have long been recognized; but the nodes remain lymph-nodes and are not converted into hemal nodes having no connection with the lymphatic system.

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[1] Weidenreich, F.: Ueber Blutlymphdrüsen, Anat. Anz., 1901, xx.

[2] Meyer, A. W.: The Supposed Experimental Production of Hemolymph-Nodes and Accessory Spleens, V. Studies on Hemal Nodes, Jour. Exper. Zoology, 1914, xvi, 241.

If we accept Meyer's conclusions on this subject it is impossible at present to say to what extent the pathologic changes hitherto ascribed to the hemolymph-nodes in disease apply to the glands of the true hemal type rather than to altered lymph-nodes. One can find descriptions of morphologic deviations of the glands of the prevertebral region in cases of pernicious anemia, posthemorrhagic anemia, Banti's disease, leukemia, pseudomelanosis, and in all infections characterized by a general intoxication. But if the hemal nodes are really something actually distinct from the supposedly related lymph-glands, the exact nature of their function and pathology must be ascertained anew.

ACTIVE PRINCIPLES OF ERGOT

Ergot is a parasitic fungus (*Claviceps purpurea*) which grows on rye (*Secale cornutum* or *cereale*) and occasionally on other kinds of grains, more rarely on other plants. Its occurrence on one of the bread-cereal grains explains why it has so frequently given rise to wide-spread epidemics of poisoning and thus acquired a considerable prominence in toxicology. Ergotism due to eating foods prepared from affected rye was very common in the earlier days. It is quite possible for 6 per cent. or more of the fungus to find its way into bread; and less than 1 per cent. is said to be sufficient to produce intoxication. Despite the fact that ergot can readily be recognized, wholesale poisoning from it has been reported even in comparatively recent years. Conspicuous are the epidemics in Nanterre, France, in 1894, in Hungary in 1908, and a long series of calamities in Russia. It may be added that in these cases two different types of symptoms appear with varying frequency, namely, the gangrenous and the convulsive forms, suggesting unlike causative agents.

Aside from these toxicologic features, ergot has long been prominent in therapeutics; and the use of pharmaceutical preparations of it, in particular the fluidextract of ergot, is familiar everywhere. In view of these twofold sources of interest it is not surprising that the composition of ergot should have attracted consideration in the early days of modern chemistry. Though ergot was studied by a number of chemists in the eighteenth century and the earlier part of the nineteenth, the first careful investigation was made by Wiggers in 1831, at a time when the long controversy as to the therapeutic utility of the drug was drawing to a close.[1] Since then there has been a more or less continuous attempt on the part of numerous chemical investigators to unravel the intricacies of a crude product which includes a mixture of stable and unstable compounds of widely unlike character. The number of "active principles" which have been reputed to be present in and isolated from ergot is almost legion. Resins, alkaloids, organic acids and glucosids have been reported. How bewildering the pharmacology of ergot had become a few years ago is indicated by the names of some of the supposed active agents which are still found in all but the most up-to-date literature: ecbolin, ergotin, picrosclerotin, sclerocrystallin, spacelinic acid, cornutin, crysotoxin, secalintoxin, sphacelotoxin, hydro-ergotinin, clavin, ergotinin and ergotoxin.

It is not surprising that in view of this confusion in the domain of chemical analysis on the one hand, and of pharmacologic symptoms and activity on the other, it has been very difficult to decide on a suitable method of assay for pharmaceutical preparations. Nor have matters been helped by the statements that ergot more than a year old is unfit for therapeutic use. Despite the extreme perplexities of the situation, investigations carried out during the past few years have actually resulted in the isolation from ergot of several active principles of undisputed identity and chemical purity, the presence of which adequately accounts for those actions of the drug that have been regarded as especially related to its therapeutic effects, each type of action having been advocated by one observer or another as a basis for its physiologic standardization.

First of these principles is the alkaloid ergotoxin, $C_{35}H_{41}O_6N_5$. Of the physiologic effects described as characteristic of ergot, the ergotoxin carefully investigated by Barger and Dale produces, pharmacologically, in very small dosage, ataxia, dyspnea, salivation, gastro-intestinal irritation, gangrene and the stimulant effect on plain muscular organs — in particular the arteries and the uterus — as well as the subsequent selective sympathetic motor paralysis caused by many ergot preparations. It is apparent from the studies of these investigators at the Wellcome Physiological Research Laboratories in London that many of the earlier "active principles" enumerated above are cruder mixtures of this ergotoxin with inactive substances from the ergot or impurities with a small admixture of the alkaloid.

Barger and Dale pointed out several years ago that the action of pharmacopeial extracts appears too great to be accounted for by the small amount of ergotoxin which they contain, and it seems likely that some other active principle is present in them. It is not difficult to find inactive constituents, such as amino-acids, which are doubtless derived from the metabolism of the fungus. From these, in turn, can be produced products of the activity of micro-organisms among which the amins are a characteristic type. Thus Barger and Dale have discovered hydroxyphenylethylamin, derived from tyrosin, and beta-iminazolylethylamin, derived from histidin by decarboxylation. The former exhibits an energetic vasoconstrictor effect and the latter, even when exhibited in minute doses, calls forth vigorous contractions of the uterus. These are, of course, phenomena characteristic of ergot itself.

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[1] A summary of this earlier history will be found in the paper by Barger, G., and Dale, H. H.: Ergotoxine and Some Other Constituents of Ergot, Biochem. Jour., 1907, ii, 240.

In addition to those of apparent therapeutic importance, certain other effects have been appreciated. Conspicuous among these is an inhibitor effect on the heart, suggesting an intense, though curiously evanescent muscarin-like action. Finding that the prominence of this effect in the action of different specimens of ergot ran closely parallel with their stimulant action on intestinal muscle, and that both were abolished by atropin, Dr. Dale was led to suspect the presence in ergot of a principle producing both of these responses. This has just been discovered by Ewins[2] to be acetylcholin, a derivative of cholin, which Hunt and de Taveau long ago described as one of the most active bases. There is now no question but that it occurs in the original ergot grains and is not derived from changes incident to the preparation of extracts. Another active principle of ergot, recognizable by its inhibitor action on the heart and its stimulant action on intestinal muscle, has thus been identified. Only the trained organic chemist can adequately appreciate the difficulties and laborious undertakings which have been crowned with this splendid success of the isolation of acetylcholin from a natural product.

THE ETHICS OF EXPERT TESTIMONY

We observe with some concern the tendency on the part of certain men of excellent scientific training and good professional position to forget their responsibility to the public. Utter confusion and misapprehension of scientific aims are likely to be the result in many minds if more discretion is not displayed by some experts in their choice of occasion on which to utilize their technical knowledge in a court of law. There is first of all the effect which the willingness to appear frequently in court is likely to have on the professional reputation of the witness himself. The expert who allows himself to form the habit of accepting any and all offers to "testify" will surely awake some day to find himself involved in a maze of contradictions which will hardly be helpful in maintaining his scientific standing.

An instance of incautious conduct in this respect was afforded in a recent case in Washington, D. C., where the question of milk standards and the interpretation of analyses came to the front. One witness, who holds a high position in a leading Eastern technical school, testified that he "could not say that milk was dirty" unless he "could see actual dirt in the milk." The same witness in a case at Providence, R. I., a few months before (July, 1913), had passed summary judgment on a score of analyses read to him from the records of the United States Department of Agriculture, and had not hesitated to condemn roundly samples of milk on the basis of reported analyses alone. Judgments to the effect that "that is a filthy milk and also a dangerous one," "that contains a large amount of cow manure and intestinal types of bacteria that go along with it," "there is a milk which is undoubtedly from a cow suffering from an udder infection," were pronounced by this witness in Providence when the records of milk analyses, without any other data, were laid before him. In Washington this witness testified that he could not say that milk containing 48,000,000 bacteria per cubic centimeter was either decomposed or filthy. In Providence he declared of a milk containing 20,000,000 bacteria per cubic centimeter that "the chief thing that can be said against the milk is that it is dirty and old; that is probably enough to say against it." In Providence, in July, the presence of the *Bacillus coli* type in milk indicated to this witness the presence of cow manure; in Washington in the following March he answered in the negative the question whether or not "the presence of *B. coli* in milk necessarily indicates that it was contaminated with fecal matter." At Providence, streptococci in milk were considered an indication of "danger," of inflammation of the udder, etc.; at Washington, streptococci, in the opinion of the same witness, were of no significance, but were simply part of the flora of normal milk.

There is no need to continue the discouraging recital. Apart from the wreck of individual reputation which is sure to follow such rash tergiversation as here illustrated, there is another side to this question which, as a matter of general scientific policy, seems to us more important.

This is the responsibility that men of science should feel both to the community and to the professional body of which they form a part. This sense of responsibility should be rooted in a steadfastness of conviction which not only should make it impossible for these men to run with the hare and hunt with the hounds, but also should make them scrutinize the essential character of the cases and causes for which they are willing to appear in public. No one knows better than the skilled investigator how much uncertainty there still is concerning many matters on which definiteness would be of great practical importance. All the more reason why he should not utilize his expert knowledge of the factors of uncertainty to confuse public-health issues and throw dust in the eyes of the uninformed. To defend dishonest or careless milkmen by invoking the well-known technical difficulties in the way of interpreting bacterial analyses seems a questionable proceeding. There may be a difference of opinion as to the significance of a particular number or kind of bacteria in milk; there may be none as to the conviction of a particular milkman of carelessness or lack of cleanliness. On the occasion of a conspicuous ocean disaster a few years ago, it was said of a prominent steamship director that the situation in which he found himself demanded of him "a certain particularity of behavior." The situation of the modern man of science requires likewise a certain particularity of behavior. He owes his standing in the community in large part to the reputation for probity, candor and clear-headedness of the professional body to which he belongs. Every act of his tends to raise or lower in the public estimation the prestige and influence of the body of scholars with whom he is associated. He has obligations to his profession. Again, the non-technical public deserves from him an unwillingness to ally himself with doubtful causes, a clearness and steadiness of conviction and especially a disinclination to envelop scientific fact and interpretation in a cuttlefish murkiness of doubt and ambiguity.

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[2] Ewins, A. J.: Acetylcholine, A New Active Principle of Ergot, Biochem. Jour., 1914, viii, 44.

We are aware that with regard to some questions public-health practice has outrun scientific judgment and needs to be set right. We know that the manifestation of personal pique and aggressiveness sometimes makes it necessary for scientific men to interpose in the interests of common fairness. Honest differences of opinion will sometimes cause men to align themselves on different sides of a *cause célèbre*. But it is clear also that there is far too much of the expert testimony which faces both ways, which befogs rather than illuminates, and which is partisan rather than candid. We appeal for a higher standard in this important field in which science has an opportunity to interpret itself to the community by making evident its disinterestedness and its desire most effectively to serve its time.

Current Comment

THE PROPHYLAXIS OF TETANUS

Statistics indicate[1] that probably there will be fewer deaths and injuries as a result of this year's celebration of the Fourth than of any previous year's. Notwithstanding, physicians cannot afford to overlook the possibility that they may have cases of tetanus to treat — and to prevent. In another column[2] we publish an article on the prophylaxis and therapy of tetanus. For convenience we here summarize the most important points in the prophylaxis:

1. Carefully and thoroughly remove every particle of foreign matter from the wound, laying it open, if necessary, under anesthesia.
2. Dry the wound thoroughly, and paint it and the surrounding parts as carefully as possible with iodin, or else cauterize it thoroughly with a 25 per cent. solution of phenol (carbolic acid) in glycerin or alcohol.
3. Apply a loose wet pack, using a solution of some such antiseptic substance as boric acid or alcohol.
4. As soon as possible inject intravenously or subcutaneously 1,500 units of antitetanic serum and continue the injections if indications of possible tetanus arise.
5. In no case close the wound. Allow it to heal by granulation. Remove the dressings and packing each day and apply fresh ones.

The loss of life from tetanus, it should be emphasized once more, is almost entirely preventable. Injection of antitoxin immediately after the injury is received, together with relentless surgical cleansing of the wound under anesthesia, constitutes insurance against tetanus in virtually every case. The few recorded cases in which antitoxin has failed to prevent tetanus have been attributable usually to a local infection which kept the tetanus bacillus alive until the antitoxin was eliminated or destroyed. Hence thorough cleansing of the injured part should not be neglected; and if the wound should suppurate, prophylactic injections of antitoxin should be repeated at intervals of eight or twelve days. If the patient is not seen until the wound is several days old, antitoxin should be given in large doses intravenously or, if symptoms indicate impending tetanus, intraspinally. The reasons for this course are given in a recent editorial.[3] In any case, promptness and thoroughness are the watchwords.

A CONTROVERTED THEORY OF NEPHRITIS

The theory of nephritis proposed by M. H. Fischer[1] has aroused considerable discussion and much criticism. One of the claims made by the Cincinnati physiologist in formulating his views on the subject is that any cell must, under conditions similar to those existing in the cells of the kidney when it is nephritic, be capable of serving as a source of albumin to a surrounding liquid medium, and so be capable of being responsible for a state which in the kidney goes by the name of albuminuria. According to this view, albuminuria represents merely that simple solution of the albumin of the kidney substance itself in the urine; that is, the protein does not come from the blood itself, except in that indirect way in which the proteins of any cell come originally from the blood. We have no desire to enter into a review of the controversy here further than to refer to the generally accepted belief that the urinary protein found in nephritis represents serum protein rather than tissue protein. Evidence in favor of this and contrary to Fischer's hypothesis has lately been offered by Dr. Salus[2] of the Hygienic Institute in the German University at Prague, Bohemia. Like previous investigators he has been able to develop a precipitin for human serum proteins by using albuminous urines as antigens. On the other hand, so-called organ plasma, a solution of tissue proteins prepared after completely removing the blood from various organs by Pohl's method, gave no reaction with the antiserum produced by injection of the protein excreted in nephritis. As, for the present, these biologic reactions offer the greatest promise of success in determining the identity of individual proteins, they place the burden of proof on those who maintain that the urinary protein of nephritis is merely the dissolved contribution of kidney cells subjected to an abnormal environment, rather than escaped blood components.

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[1] The Spread of the "Sane Fourth" Movement, The Journal A. M. A., June 13, 1914, p. 1898.

[2] Tetanus, Therapeutics Department, this issue, p. 1964

[3] The Serum Treatment of Tetanus, editorial, The Journal A. M. A., April 11, 1914, p. 1174.

[1] Fischer, M. H.: Nephritis, New York, 1912, John Wiley & Sons; The Treatment of Nephritis and Allied Conditions, The Journal A. M. A., May 31, 1913, p. 1683.

[2] Salus, G.: Biologische Versuche mit Organplasma, Biochem. Ztschr., 1914, lx, 1.

SPECIAL TRAINING FOR THE SPECIALIST

Notice is given elsewhere[1] of a two-year graduate course offered by the University of Minnesota to physicians desiring to specialize in diseases of the eye, ear, nose and throat. Satisfactory completion of this course will secure a suitable degree. This is a parallel to the graduate courses in public health given by five of our leading universities[2] preparatory to a special degree in public health. Such courses as these provided by high-grade universities will place the term "specialist" on a reliable basis. If such special courses are worth while for the development of public-health experts and for specialists in diseases of the eye, ear, nose and throat, why should not similar and equally thorough courses be established to furnish acceptable training in the other specialties of medicine? This idea may also hold a solution for the problems relating to special fields of practice now being exploited by various medical sects. Surely, before any one proposes to specialize in any particular field in the practice of medicine he should have secured, in addition to the usual medical course, further training in the diagnosis and treatment of the particular diseases included in that specialty. The establishment of the special graduate courses in public health by leading university medical schools and this special course for ophthalmologists at the University of Minnesota points to a new field in which there are great possibilities for the development of medical education.

BRITISH VIEWS OF AMERICAN MEDICAL ETHICS

Following the publication of the "Family Medical Encyclopedia" in England, as has been previously mentioned,[3] a storm of protest arose in the British Medical Association, at the publication of a list of contributors in such a book intended for the public. This type of medical advertising was severely condemned and likened to "the fever of self-advertisement which characterizes the American profession from tip to toe." In response to demands on the part of numerous members the Council of the British Medical Association has promulgated certain rules concerning the publication of medical books intended for the laity. These regulations are embodied in a letter from the London correspondent of The Journal, which appears on another page.[4] Without attempting, however, to discuss further the history of this monumental blunder — which may, perhaps, have been not entirely a blunder — on the part of so many well-known English medical men, let us revert to the point made in the previous editorial. It will be noted that our correspondent says: "It must be borne in mind that the professional rule against advertising is much more stringent in this country than in America." He voices, no doubt, the general impression of the foreign physician concerning American medical practitioners. When are these insults to cease? Can our foreign contemporaries point to a single incident in which medical men of America of equal rank with the English physicians concerned have loaned their names to such an outrageous enterprise? Can they point to a single American, connected with a reputable clinic, who would authorize and countenance the publication of such an obvious and misleading puff as was sanctioned by Drs. Krönig and Gauss in a recent issue of *McClure's?* Certainly, so far as we can determine, they will be unable to find one. The wise sanitarian will disinfect his own premises before naming as unclean the domicile of his neighbors.

THE DISTRIBUTION AND ELIMINATION OF ARSENIC IN THE BODY

Although arsenic can no longer claim the popularity that it once enjoyed as a "family poison," it is used often enough to make accurate information regarding its distribution in the organism desirable. Furthermore, the increasing use in practical medicine of the organic compounds of arsenic, notably salvarsan and its derivatives, emphasizes from the point of view of pharmacotherapy as well as that of the toxicologist and medicolegal expert, the need of knowledge respecting the fate of the drug in the body. We believe that we do not err in admitting that various investigators who have studied the retention of arsenic in the body have obtained results which decidedly disagree. A recent experiment in the department of physiology at the University of Missouri[1] has furnished data regarding the distribution of arsenic, in one case twenty-four hours after feeding 35 mg. to a fasting animal and before any elimination took place; in another, twenty days after administration of the same dose. The muscles retained the largest absolute amount of arsenic. In each case the metal was found to preponderate in the muscle, liver and intestine, respectively. In the animal killed early, the blood assumed fourth and the skin fifth place in the retention of the poison; but after twenty-one days these tissues had had time to lose all detectable arsenic. Their tendency is to eliminate it as rapidly as possible. It is interesting that the heart, although one of the smaller organs, is high in the order of retention, while the spleen, spinal cord, lung and kidney were lowest. No arsenic was excreted at any time with the feces. The results indicate, under the conditions presented in this research, that a single dose of arsenic, not large enough to disturb metabolism noticeably, is eliminated in about fifteen days.

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[1] This issue, page 1983.

[2] Universities of Pennsylvania, Michigan, Wisconsin and New York, and Harvard.

[3] The Journal, May 2, 1914, pp. 1407, 1414.

[4] See London Letter, this issue, p. 1977.

[1] Dutcher, R. A., and Steel, M.: The Estimation and Retention of Arsenic as Determined by the Koch-Norton Method, Jour. Am. Chem. Soc., 1914, xxxvi, 770

STATISTICS OF FOURTH OF JULY INJURIES

The old life-destroying methods of celebrating Independence Day are tolerated less and less with each succeeding year. Public opinion has been aroused, the primary stimulus having been supplied by the annual statistics which we have collected and published for eleven years. Much of the credit for this work is due to the physicians who have kindly cooperated with us by sending in reports of cases. May we hope that this year also every physician who has a Fourth of July injury to attend will send us a report? What is desired is a brief mention of the actual injury, the immediate cause (the kind of cartridge or fireworks used) and the result. It is important that effort be not relaxed until the "safe and sane Fourth" has become permanently established everywhere.

Medical News

DISTRICT OF COLUMBIA

Hospital for Women.—The sundry civil bill report to the House of Representatives contained an item of $200,000 for the completion of a hospital for women.

Eradication of Tuberculosis.—The report of the District Health Department contains an elaborate account of its activities in limiting and ultimately suppressing tuberculosis. It is recommended that a campaign should be organized against this disease as a public health measure; that facilities for the treatment of incipient tuberculosis should be made available at hours adapted to the ordinary workingman; that the existing hospital facilities should be made available to the person in moderate circumstances; that some method should be provided whereby persons in moderate circumstances desiring to take treatment in their own homes could be assisted. The case-rate of tuberculosis in the district during the last fiscal year was 223 white persons and 643 colored persons per 100,000; and the death-rate from all forms of tuberculosis was 133 white and 504 colored; and that the rate for pulmonary tuberculosis alone per 100,000 was 120 white and 426 colored persons.

ILLINOIS

New Officers.—Galesburg Medical Society, June 2: president, Dr. Ralph C. Matheny; secretary-treasurer, Dr. Clarence B. Ripley.

Personal.—George Peter Dreyer, A.B., Ph.B., has been appointed dean of the junior faculty, professor of physiology and physiologic chemistry, and head of the department in the College of Physicians and Surgeons.——Dr. Charles F. W. Eberlein, chief of staff of the Oak Forest Infirmary, has resigned.

Sanatorium Notes.—The Kane County Anti-Tuberculosis League has planned a temporary tent colony, pending favorable action on the county tuberculosis sanatorium proposition. A site has been selected near Gilbert, and a donation of $2,000 has already been promised.——Plans for a new sanatorium building to be erected at Collinsville by the Harrison Tuberculosis Association have been completed, and ground is to be broken within the week. The building will be T-shaped, 176 feet deep, with a frontage of 35 feet and will accommodatae thirty patients.

Chicago

Chicago Medical Society Elects.—At the annual election, June 16, the following officers were elected: Dr. Charles J. Whalen, president; Dr. Charles E. Humiston, secretary.

Sanatorium Work Well Done.—Dr. Theodore B. Sachs, president of the board of trustees of the Municipal Tuberculosis Sanatorium, reports that the work on the sanatorium is being done according to contract, and that the institution will be ready for occupancy in November.

Meet after Fifty Years.—At the graduation exercises of the Northwestern University Medical School in Chicago, two graduates of the class of 1864 met for the first time since their graduation. They were Drs. Albert L. Converse of Springfield and P. J. Kelsey of New York City. A luncheon was given for the two alumni by President Harris of the University, at his home in Evanston.

Rush Alumni Elect.—At the annual meeting of the Alumni Association of Rush Medical College in Chicago, June 10, the following officers were elected: president, Dr. Arthur M. Corwin, Chicago; vice-presidents, Drs. Daniel H. Bowen, Waukon, Iowa; Charles J. Lewis, Chicago, and John R. McDill, Milwaukee; secretary, Dr. Charles A. Parker, Chicago; treasurer, Dr. Elmer E. Kenyon, Chicago, and necrologist, Dr. John J. Stoll, Chicago.

Internship Required.—The faculty of the Northwestern University Medical College, at a recent meeting, voted that hereafter every student who matriculates will be required to spend at least one year as an intern, and in an acceptable hospital, before a degree will be given. This school is the fourth medical school to make hospital internship a condition for a degree, the other schools being University of Minnesota Medical Department, Rush Medical College and the Medical Department of Leland Stanford University.

Bust of Dr. Steele Presented.—On June 10 a bust of Dr. D. A. K. Steele was presented to the College of Physicians and Surgeons of the University of Illinois by the faculty and alumni of the college. The presentation was made by Dr. Adolph Gehrmann and the bust was accepted by President James of the university. It was largely through Dr. Steele's efforts that the organization of the College of Physicians and Surgeons was united with the University of Illinois, and for more than thirty years Dr. Steele has devoted his efforts to the supporting and upbuilding of the school.

Alumni Meeting.—At the alumni meeting of the Association of the College of Physicians and Surgeons of the University of Illinois, held in Chicago, June 10, addresses were made by President Edmund Janes James of the university, who announced a plan of asking $1,000,000 from the legislature for the construction and endowment of a teaching hospital as a part of the university; by W. S. Abbott, president of the board of trustees, and Dr. Albert L. Brittin, Leslie, Ill., president of the Illinois State Medical Society. The following officers were elected: president, Dr. J. M. Berger; vice-presidents, Drs. Charles H. Phifer and George J. Lorch; secretary, Dr. Frank Chauvet; treasurer, Dr. Robert N. Morris, all of Chicago.

INDIANA

Hospital Units Ready.—The State Board of Health expects to occupy two units of the State Hospital next week, and has asked the city comptroller to recommend a temporary loan to the city council of $65,000 for the use of the board.

A Clinic for Babies.—A clinic for examining babies and to give advice to mothers concerning the child's health and diet is being maintained by the Children's Association of Indianapolis. The stations are in charge of Drs. J. Don Miller, Walter D. Hoskins, Leslie H. Maxwell and Lehman M. Dunning.

Disease Prevention Day.—The governor has consented to issue a proclamation calling the people of the state to observe a day in October, to be designated as Disease Prevention Day. Sixty antituberculosis societies will lead in observing the day, and will have the cooperation of the State Board of Health, the State Anti-Tuberculosis Society and municipal officers of many cities.

Personal.—Dr. T. Victor Keene has been elected president and Dr. Thomas B. Eastman vice-president of the Board of Health of Indianapolis.——Dr. J. Willard Parrish, Shelbyville, has been appointed physician of the Shelby County Orphans' Home.——Dr. Gustavus B. Jackson has been appointed a member of the Indianapolis Board of Health, vice Dr. Mavity J. Spencer, term expired.——Dr. Henry O. Wells, Fort Wayne, has been elected president of the Blue Cass Springs Sanatorium, Woodburn.

Long Hospital Dedicated.—Dedicatory exercises of the Robert W. Long Hospital were held in the chambers of the House of Representatives, June 15. Governor Ralston presided and an address was delievered by Dr. Henry J. Pritchett, president of the Carnegie Institute for Medical

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Hospital Notes.—At a meeting of the citizens of Barberton, June 2, it was decided immediately to incorporate a stock company for the purpose of erecting a hospital, to cost from $50,000 to $60,000, and to be known as the City Hospital Company of Barberton. Dr. William A. Mansfield was elected temporary president, and Dr. Herbert A. Rodenbaugh, temporary secretary of the organization.——The cornerstone of St. Elizabeth's Hospital, Youngstown, was laid by Bishop Farrelly, May 30. The building is expected to be ready for occupancy early in January of next year. ——A new hospital is to be built in Fremont, to cost $150,000. Of this sum, $100,000 was bequeathed to the city on the condition that an additional sum of $50,000 be raised by the citizens.

Trachoma in Ohio.—Dr. F. G. Baudreau of the State Board of Health, found 23 of the 80 inmates of the Athens County Children's Home suffering from trachoma. Since the report by Dr. Joseph W. Schereschewsky, Washington, of the Public Health Service concerning trachoma in the employees of the Youngstown Sheet and Tube Works at East Youngstown, and on the generally bad sanitary conditions of the town, overcrowding of lodging and boarding houses, etc., action has been taken to remedy conditions by the town council. The medical department of the Sheet and Tube Works has also instituted many reforms, have bettered sanitary conditions, and are cooperating with the city authorities. The trachoma hospital established by the company will soon be supplied with tub and shower baths for the benefit of the citizens generally and the employees of the company, for the use of which a very small fee will be charged. The council was recently addressed by Dr. Sidney M. McCurdy, chief surgeon, and J. M. Wolz, head of the safety department of the Sheet and Tube Works, on the necessity for better housing and better municipal sanitation.

Cincinnati

Honor to Kramer.—Dr. Simon P. Kramer was given a banquet by physicians of Cincinnati, May 20, at which Dr. Charles L. Bonifield was toastmaster.

Contagious Disease Hospital.—Plans have been completed for the contagious portion of the General Hospital, which is to be constructed west of the tuberculosis group at Lick Run. The building will be two stories and basement in height, 140 feet in depth and will cost $35,000.

Academy Clinics.—A series of interesting clinics were held under the auspices of the Cincinnati Academy of Medicine at the City Hospital, by Drs. William D. Haggard, Nashville, Tenn.; Dr. Wendell C. Phillips, New York City, and Richard C. Cabot, Boston, on the mornings of June 10, 11 and 12.

Summer Lectures.—On June 9, the Health Department inaugurated a series of lectures for district physicians, school nurses, supervisors of nurses and visiting nurses. One June 9, Dr. Frank H. Lamb spoke on "Physiology in Metabolism"; on June 10, Dr. Alfred Friedlander spoke on "The Treatment of Gastro-Enteritis and Other Diseases Peculiar to Children," and on June 11, Dr. Benjamin K. Rachford spoke on "Infant-Feeding."

PENNSYLVANIA

Philadelphia

American Orthopedic Association.—Clinical Day of the twenty-ninth annual meeting of the American Orthopedic Association was held at the University Hospital on Wednesday, June 17.

Rapid Transit Safety Contest.—The Safety Bureau of the Rapid Transit Company has awarded prizes for essay, verse or drawing expressing a practical means of prevention of street accidents. The contest was opened to children in the city schools.

To Stimulate War on Flies.—Director Harte of the Department of Public Health and Charities has started a fly-catching

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OHIO

Personal.—Dr. A. W. Davis, city health officer of Canal Dover, has resigned.——Dr. Valloyd Adair, as the result of competitive examinations, has been appointed health officer of Lorain.——Dr. Morris C. Tuholske has been reappointed medical examiner of the public schools of Akron.——Dr. Rockwell B. Hubbard, Sandusky, was seriously injured, recently, as a result of a head-on collision between his automobile and an electric train.

Hospital Notes.—At a meeting of the citizens of Barberton, June 2, it was decided immediately to incorporate a stock company for the purpose of erecting a hospital, to cost from $50,000 to $60,000, and to be known as the City Hospital Company of Barberton. Dr. William A. Mansfield was elected temporary president, and Dr. Herbert A. Rodenbaugh, temporary secretary of the organization.——The cornerstone of St. Elizabeth's Hospital, Youngstown, was laid by Bishop Farrelly, May 30. The building is expected to be ready for occupancy early in January of next year.——A new hospital is to be built in Fremont, to cost $150,000. Of this sum, $100,000 was bequeathed to the city on the condition that an additional sum of $50,000 be raised by the citizens.

Trachoma in Ohio.—Dr. F. G. Baudreau of the State Board of Health, found 23 of the 80 inmates of the Athens County Children's Home suffering from trachoma. Since the report by Dr. Joseph W. Schereschewsky, Washington, of the Public Health Service concerning trachoma in the employees of the Youngstown Sheet and Tube Works at East Youngstown, and on the generally bad sanitary conditions of the town, overcrowding of lodging and boarding houses, etc., action has been taken to remedy conditions by the town council. The medical department of the Sheet and Tube Works has also instituted many reforms, have bettered sanitary conditions, and are cooperating with the city authorities. The trachoma hospital established by the company will soon be supplied with tub and shower baths for the benefit of the citizens generally and the employees of the company, for the use of which a very small fee will be charged. The council was recently addressed by Dr. Sidney M. McCurdy, chief surgeon, and J. M. Wolz, head of the safety department of the Sheet and Tube Works, on the necessity for better housing and better municipal sanitation.

Cincinnati

Honor to Kramer.—Dr. Simon P. Kramer was given a banquet by physicians of Cincinnati, May 20, at which Dr. Charles L. Bonifield was toastmaster.

Contagious Disease Hospital.—Plans have been completed for the contagious portion of the General Hospital, which is to be constructed west of the tuberculosis group at Lick Run. The building will be two stories and basement in height, 140 feet in depth and will cost $35,000.

Academy Clinics.—A series of interesting clinics were held under the auspices of the Cincinnati Academy of Medicine at the City Hospital, by Drs. William D. Haggard, Nashville, Tenn.; Dr. Wendell C. Phillips, New York City, and Richard C. Cabot, Boston, on the mornings of June 10, 11 and 12.

Summer Lectures.—On June 9, the Health Department inaugurated a series of lectures for district physicians, school nurses, supervisors of nurses and visiting nurses. One June 9, Dr. Frank H. Lamb spoke on "Physiology in Metabolism"; on June 10, Dr. Alfred Friedlander spoke on "The Treatment of Gastro-Enteritis and Other Diseases Peculiar to Children," and on June 11, Dr. Benjamin K. Rachford spoke on "Infant-Feeding."

PENNSYLVANIA

Philadelphia

American Orthopedic Association.—Clinical Day of the twenty-ninth annual meeting of the American Orthopedic Association was held at the University Hospital on Wednesday, June 17.

Rapid Transit Safety Contest.—The Safety Bureau of the Rapid Transit Company has awarded prizes for essay, verse or drawing expressing a practical means of prevention of street accidents. The contest was opened to children in the city schools.

To Stimulate War on Flies.—Director Harte of the Department of Public Health and Charities has started a fly-catching contest, opened to every boy scout. Prizes have been offered to those who catch the largest number. The contest will be conducted by the various troops, and the troop-master will be judge of the boys within his troop.

Small Appropriation for Mosquito Extermination.—Councils have appropriated only $1,400 to fight mosquitoes in this city. A meager fund with which to break up the breeding-places in the marshes and pools around Philadelphia, which is always open to breeding-places for mosquitoes, as 8,500 acres of the city's area is below the level of high water of Delaware and Schuylkill Rivers.

Women to Enter Medical Department of the University of Pennsylvania.—It has been announced that the Medical Department of the University of Pennsylvania has decided to open the doors of its medical department to women. It has been stated that this announcement will be made officially at the annual commencement. It is also predicted that the dental department will be opened later to women.

Personal.—Dr. James Tyson was a guest of Chief Surgeon George W. Reese of the Shamokin Hospital on May 27, and guest of honor of the Shamokin Medical Society at a banquet at the Windsor Hotel the same evening. Dr. A. MacKensie Forbes of Montreal, Canada, will give a demonstration of his method of applying a plaster cast in treatment or correction of scoliosis, at the Methodist Hospital, on Monday June 22, at 10:30 o'clock.

Campaign for West Philadelphia Hospital.—The campaign to raise $150,000 for the new building for the West Philadelphia General Homeopathic Hospital opened with a dinner to the captains at the campaign headquarters, in Horticultural Hall, June 9. A large clock has been built at Fifty-Second and Chestnut Streets to indicate the returns, and forty-five smaller clocks have been placed in prominent places in West Philadelphia. At the end of the third day a total of $23,917 had been subscribed.

Hospital News.—The Municipal Summer Hospitals for the care of sick children and infants were opened at the Race Street and Chestnut Street piers, June 15. Councils placed $6,500 at the disposal of the director of health to increase the accommodations of both these hospitals. Dr. S. W. Newmayer, assistant medical inspector, has charge of the Chestnut Street pier, which is equipped with twenty beds and a corps of three nurses.——The new Jewish Maternity Hospital at Sixth and Spruce Streets was dedicated June 9.——The contract for two additions to the St. Mary's Hospital has just been awarded. The new structure, of brick with stone and terra-cotta trimmings, will consist of a five-story and basement wing to be built on Palmer Street, a distance of about 170 feet, with another wing along Sepviva Street, a distance of 68 feet. The greater portion of this wing will be five stories high and will contain a convent for sisters and a power-house with a laundry. There will be a roof garden with facilities for the treatment of sunstroke and heat cases. The main entrance will be on Palmer Street.

TENNESSEE

Colleges Merged.—It is reported that the Lincoln Memorial University Medical Department of Knoxville has merged with the University of Tennessee College of Medicine, located at Memphis. Under the terms of the merger, the three remaining classes will be taught at the University of Tennessee, but the degrees will be granted by the Lincoln Memorial University. The last class will be graduated, therefore, in 1917.

TEXAS

Sanatorium Burns.—The tuberculosis sanatorium at 219 Dullnig Street, San Antonio, was destroyed by fire, May 29, with a loss of about $3,000.

New Officers.—North East Texas Medical Association at Texarkana, June 2: president, Dr. Robert H. T. Mann; secretary, Dr. Edwin L. Beck, both of Texarkana.

Alumni Elect.—At the annual meeting of the alumni of the State Medical College, Galveston, May 30, the following officers were elected: president, Dr. Holman Taylor, Ft. Worth; vice-president, Dr. W. Wallace Ralston, Houston; secretary, Dr. Harry O. Sappington, Galveston.

Personal.—Dr. Joseph E. Dildy, Lampasas, narrowly escaped drowning while attempting to ford a swollen creek near Lampasas, June 4.——Dr. James E. Lay, Jr., Sweet Home, health officer of Lavaca County, has resigned.——Dr. E. M. Wood, Georgetown, has been appointed a member of the State Board of Medical Examiners, vice Dr. J. H. Evans, deceased.

Compulsory Vaccination.—The attorney-general has rendered an opinion, on the presentation of the question by the county attorney of Jackson County, to the effect that a local health officer has no authority to require vaccination of schoolchildren as a condition precedent to attendance at school, nor can he close the schools on failure to observe such requirement. It is held that authority to close the schools can only be exercised by the trustees when there are actual cases of disease in a school.

VIRGINIA

Trachoma in the Virginias.—Surgeon Taliaferro Clark of the United States Public Health Service, in *Public Health Reports*, June 5, reports on the survey of trachoma conducted in Virginia and West Virginia during 1913 and 1914. Inspections were made in twenty-three counties of the state, in which 20,848 persons were examined, among whom 340 cases of trachoma were found, 1.63 per cent. The survey of the mountainous sections of Virginia was completed April 29, 1914, during which ten counties in Kentucky and West Virginia were also visited, and 7,801 persons were examined. Of these, 108 had the disease, 1.38 per cent. Examinations were confined almost exclusively to the schoolchildren, as this was found to afford a very good index of the prevalence of trachoma and saved time over a house-to-house examination. An examination of state institutions shows trachoma also prevalent in counties not visited. The counties of the eastern edge appear to be free from it, a fact which is probably due to infrequent contact with infected territory. No systematic effort is being made to control the spread of trachoma over the infected territory. The necessity of action for suppression of the disease is shown by the 5.29 per cent. of marked visual damage in the total trachoma cases found during the survey of West Virginia. Recent foreign immigration was not an element in the introduction of trachoma. The negro race in the two states is practically free from the disease. Among the recommendations made by Clark are that systematic examinations should be made of all schoolchildren of the states, and the children suffering from active trachoma should be excluded from the schools and placed under medical supervision. A school nurse should be employed wherever practicable, to visit the homes of the children debarred from schools, and put into practice under the physician's directions principles of control. A campaign of education should be instituted in the infected territory through talks and distribution of printed information. Free hospitals of inexpensive construction are recommended at points convenient to groups of the most heavily infected counties. Cooperation of the mining companies should be secured so that systematic examination of miners might be made for trachoma. Improvement should be made in the sanitary condition of the rural schools.

WEST VIRGINIA

Antituberculosis Work.—Dr. Harriet B. Jones, Wheeling, director of the tuberculosis exhibit of the Anti-Tuberculosis League of West Virginia, reports that during the year she has visited 130 towns and 35 counties, has given 365 talks in schools to 37,592 pupils, has lectured 93 times at night to 17,877 adults. The tuberculosis exhibit car, in charge of Dr. Thurman Gillespy, Wheeling, has visited 133 towns and has been seen by at least 100,000. Literature was distributed from the car, in schools, at lectures, in trains and at railroad stations. The car was donated by the Baltimore and Ohio Railroad, and free transportation was given over all roads during the six months of the work. Twenty counties yet remain to be visited, and the work will begin again in the fall.

WISCONSIN

Sanatorium to Be Enlarged.—On May 22, Dr. John R. Currens, trustee of the Maple Crest Sanatorium, Two Rivers, appeared before the board, pleading the overcrowded condition of the sanatorium and the necessity of having separate wards for men and women. An appropriaiton of $3,500 was made.

Leper in Soldiers' Home.—It has been discovered by the medical staff of the Soldiers' Home, West Allis, that one of the inmates, who came to the home from Hot Springs, Ark., about two weeks ago, is suffering from leprosy, believed to have been contracted while serving in the Philippine Islands.

Personal.—Dr. and Mrs. Victor F. Marshall and son and Dr. Albert E. Rector, Appleton, sailed for Europe, June 27.——Dr. John M. Beffel, Milwaukee, has recovered from his recent illness.——Health Commissioner George C. Ruhland, Milwaukee, has appointed Drs. Leopold Schiller and Emil T. Lobedan as medical aids. Dr. Schiller has been placed in charge of the contagious diseases and Dr. Lobedan in charge of the child welfare. Dr. George R. Ernst, Wauwatosa, remains in charge of the tuberculosis division.

GENERAL

Fight Bubonic Rats.—The House of Representatives, on June 11, sanctioned an appropriation of $200,000 to kill rats and squirrels in California.

Medical Examiners Meet.—The fourteenth annual meeting of the Association of Medical Examiners will be held June 22 at Hotel Denis, Atlantic City, under the presidency of Dr. Henry Wireman Cook, Minneapolis.

American Association of Immunologists.—The first annual meeting of the American Association of Immunologists will be held in Atlantic City, at the Hotel Chelsea, Monday, June 22. A program of interest and importance has been arranged.

Bequests and Donations.—The following bequests and donations have recently been announced:

Presbyterian Hospital, Philadelphia, $1,000, by the will of Anna Claghorn.

University of North Carolina, for the construction of an athletic stadium, a donation of $25,000, by Mr. I. E. Emmerson, Baltimore.

St. Justin Hospital, Montreal, a donation of $5,000.

Public Health Day at Biennial.—June 15 was celebrated as Public Health Day at the Chicago meeting of the Federation of Women's Clubs. The program of the conference included the topics of public health, visiting nurses, the rights of childhood, work of women in tuberculosis, value of marriage certificates and the teaching of social purity. The day was under the auspices of the Chicago Medical Women's Club.

Students of Epilepsy Hold Meeting.—At the anual meeting of the National Association for the Study of Epilepsy and the Care and Treatment of Epileptics, held in Baltimore, May 25, under the presidency of Mr. William C. Graves, Chicago, about 200 physicians and laymen were present. The next annual meeting will be held in Skillman, N. J., at the New Jersey Home for Epileptics, as guests of the president of the board of managers and Dr. David F. Weeks, the superintendent. The following officers were elected: president, Dr. Albert S. Priddy, Lynchburg, Va.; vice-presidents, Drs. David F. Weeks, Skillman, N. J.: J. M. Murdoch, Polk, Pa., and Walter C. Van Nuys, Newcastle, Ind.; chairman of the executive committee, Dr. James F. Munson, Sonyea, N. Y.; and secretary-treasurer, Dr. Arthur L. Shaw, Sonyea, N. Y.

The Russell Sage Institute of Pathology.—At a meeting of the board of directors of the Russell Sage Institute of Pathology, held in New York, June 5, the following officers were elected: president, Dr. D. Bryson Delavan; vice-president, Dr. Simon Flexner; secretary, Dr. Theodore C. Janeway; treasurer, Dr. Graham Lusk. Appointments to the scientific staff were as follows: scientific director, Dr. Graham Lusk; medical director, Dr. Eugene F. Du Bois; chemist, F. C. Gephart, Ph.B.; assistant, Dr. A. L. Meyer. Dr. Lusk reported for Dr. Du Bois that 142 observations had been made on patients and on some normal controls during the past year and a half, using the respiration calorimeter established in the second medical division of the Bellevue Hospital. In certain individuals an exact agreement between the actual heat production and the heat calculated from the gaseous exchange during hourly periods was obtained for the first time in man. In the total of all experiments involving the measurement of 23,000 calories, these two methods of direct and indirect calorimetry agree both in health and disease within 1¼ per cent. The investigated cases included nine cases of typhoid during both fever and convalescence, one cretin, seven cases of exophthalmic goiter, one of splenic anemia, another with pernicious anemia, one man with acromegaly, one with hypopituitarism, one with malaria, and one with auricular fibrillation, mitral stenosis and greatly enlarged heart.

CANADA

Hospital News.—The Kingston General Hospital had 2,108 patients during the year 1913: 88 deaths and 76 births. At the Hotel Dieu Hospital the patients numbered 1,823: 62 deaths and 76 births.——The Connaught Home for Nurses has been opened at the Weston Sanatorium near Toronto.——A special building for eye, ear, nose and throat work has been opened at the London Victoria Hospital; also a ward with a roof garden for tuberculosis cases.——Vernon, B. C., has voted $5,000 to its general hospital.

Personal.—Dr. George R. McDonagh, Toronto, has returned from four months in South America.——Dr. William P. Caven, Toronto, will sail for Europe shortly.——Dr. Douglass W. Montgomery, San Francisco, while in Toronto recently, was entertained at dinner by Dr. William H. B. Aikins at the York Club.——Dr. Helen MacMurchy, Toronto, has sailed for England, where she will represent the Ontario government at the Health Conference of the Victoria League.——Dr. Robert J. Blanchard, Winnipeg, for many years chief surgeon of the Manitoba division of the Canadian Pacific Railway, has resigned and Dr. A. W. Moody appointed to the position.——Dr. Robinson of the anatomic department of the University of Toronto, acceptably filled in the lectures of Dr. Andrew W. H. Lindsay, Dalhousie University, Halifax, during the latter's illness. Dr. Lindsay was subsequently drowned in the *Empress of Ireland* disaster.

University News.—April 30 fourteen candidates, thirteen men and one woman, received the degree of M.D., C.M., from Dalhousie University, Halifax. The pathologic department is now housed in a new building erected close to the Victoria General Hospital. The faculty of medicine will occupy the old arts and science rooms when the latter enters into its new quarters.——The Dr. Copwell medical library, which was left to the Nova Scotia Medical Society and the Halifax Medical College conjointly some years ago, is now, owing to the incorporation of the medical college with Dalhousie University, the subject of litigation. The Medical Society of Nova Scotia reminded the university that they had an interest in the library, and it could not be taken over by the university without the society's consent. Hence the university has subjected the matters to the courts for a decision as to legal ownership.——The Ontario government has made a grant of $10,000 to the medical faculty of Queen's University, Kingston. Owing to the recent adoption of the five-year course, there will be required for next session a professor of biochemistry, an assistant professor of physiology and an assistant professor of bacteriology and hygiene. The grant will go toward the increased expenditure in connection with these appointments.——The corporation of McGill University, Montreal, has adopted a regulation requiring all students to produce a certificate of vaccination before entering the university.——The medical department of the Western University, London, Ont., has been granted $10,000 by the Ontario government. Twenty-three were graduated from the department at the close of the present session, Dr. C. C. Cornish, Ingersoll, Ont., being the gold medalist. A professor of physics and a professor of physiology is to be appointed, which will give six full-time professors.——Twenty-five students have been in attendance the past session in the premedical course at the University of Alberta. Next year a two-year course will be given.

LONDON LETTER

LONDON, May 29, 1914.

Adami on Medical Education in Canada

John George Adami, who is now in London, has been publicly awarded the Fothergillian Medal by the Medical Society of London for his distinguished services to pathology. In a press interview he has given his views on medical education in Canada. He regards the outlook as unquestionably hopeful as is evidenced, for instance, in the recent opening of the magnificent hospital at Toronto. This, with its splendid attached laboratories for pathology and pathologic chemistry, is now, he considers, the most up-to-date hospital in the world. It has been possible, by the cooperation of the state, the city and the university, to secure adequate funds, and in Toronto, as in other cities in Canada and the United States, the fact that it has been practicable to start from rock bottom has been a great advantage. The great weakness in Canada, he thinks, is its terrible system of preliminary education, which is due partly to the country having adopted "the unfortunate American ideal of the class system." The democratization of education results in the bright boys of a class idling eight months of the year, and in consequence the ordinary American or Canadian boy is two or three years behind when he comes up to the university. His English is defective, his general knowledge is miserable, and he cannot express himself. Again we have the appalling predominance of women teachers. Owing to the opportunities in the country only the poorer type of man is attracted into teaching and the bulk of preuniversity work is done by women who for the most part are farmers' daughters. So much is this the case that the technical school journals use the word "she" instead of "he" in referring to teachers. A vicious circle has been started, for the people, finding that their children benefit little either in learning or in general character from the schools, refuse to spend the money necessary to attract good men into the service. The evils of the school training are, however, partly corrected by the individualism of the students when they come to the universities. When one compares Canadian medical education with that of the United States we have one great advantage, says Adami. We have retained the English traditions of allowing the students to walk the hospitals—Sir William Osler succeeded in introducing it into America in the Johns Hopkins Hospital—and as a result of the Canadian method we find Canadian doctors holding a large number of very important positions in the United States. Another difference between ourselves and the States is that they are inclined to think that a student should take a degree in arts before starting medicine. This tends to make a man terribly academic by the consequent length of the curriculum, and thus to unfit him for work as a general practitioner. In Canada we aim rather at giving our men all that is necessary in the preliminary sciences by using medical examples. For example, we rather teach the physics of lenses by means of the ophthalmoscope, and some of the elements of sound by the stethoscope, and we look to the schools to get men familiar with the bare elements of the preliminary sciences.

The British Medical Association and the Issue to the Public of Books on Medical Subjects

The scandal created by the publication of "The Family Encyclopaedia of Medicine" has been described in a previous letter to The Journal. It must be borne in mind that the professional rule against advertising is much more stringent in this country than in America. A physician is forbidden to bring himself before the public in any way calculated to attract patients. The council of the British Medical Association has issued the following rules: 1. The publication of a book to the public on a subject of general interest—such, for instance, as dietetics—by a medical man is not a transgression of any definite rules of medical ethics if the object of the publication is to inform the public and not to advertise the medical man. 2. Such book may be advertised in the lay press, but the propriety of this would depend on the nature of the advertisement, which should conform to certain recognized principles. 3. There can be no objection to signing the preface to a book if the object of the publication is to inform the public and not to advertise the medical man, but it is desirable that his address should not be added. 4. The publication of a book to the public on medical subjects which contains a large number of prescriptions in common language is highly dangerous to the public and should not be countenanced.

Scientist's Novel Claim

Sir Ronald Ross, K.C.B., F.R.S., the well-known discoverer of the fact that malaria is conveyed by mosquitoes has forwarded to the Chancellor of the Exchequer for submission by him to Parliament a petition setting forth his claims for a grant or pension. He says that he has adopted the precedent of Jenner in order to bring to a head the whole question of the treatment of scientific men in this country. Edward Jenner was a practicing physician and when he discovered vaccination against small-pox he lost most of his practice in consequence of the time spent in the investigation. He accordingly petitioned Parliament which gave him for compensation $50,000 in 1802 and $100,000 in 1807. At present the only grants made by Parliament in consequence of scientific or literary eminence are small pensions varying from $100 to $1,000 a year. These partake somewhat of the nature of charity, as they are granted to persons who have benefited humanity by their work and are in needy circumstances. They are also granted to their widows or children in similar circumstances. Sir Ronald Ross says that the principle here is wrong, not to say ignoble. It is not a question of public charity but public indebtedness. It is not fair that persons should suffer pecuniarily for the advantages which they confer on the world or on their nation. Only in certain branches of science do discoveries result in pecuniary gain, as in the smaller clinical observations which increase the practice of physicians. The greatest discoveries, which determine the germs which cause disease or the methods by which they are carried from man to man, lead to no pecuniary reward, whatever, yet they are just the ones that are most important to the public. Sir Ronald's action is being widely discussed in scientific and parliamentary circles as the principle on which he bases his claim is capable of wide application to all forms of scientific, literary and artistic inventiveness. He suggests that a standing fund and a standing committee should be appointed to investigate claims, the settlement of which he does not think would require more than $100,000 per annum.

PARIS LETTER

Paris, May 29, 1914.

Adrenal Virilism

At the session of the Académie de médecine, May 26, Dr. Tuffier, *agrégé* and surgeon of the hospitals of Paris, made an interesting communication on the subject of suprarenal virilism: that is to say, organic disturbances of development, characterized either by precocious virility in the infant, or by the masculine aspect which a woman may acquire, even after the menopause, under the influence of a tumor of the suprarenal gland. Tuffier had the privilege of observing an example of the last variety in a woman 62 years of age, who had come under his supervision through copious metrorrhagias. The examination showed a voluminous fibroma; but since the urine contained 70 gm. of sugar to the liter, the wisdom of an operation was doubtful. At the first examination, Tuffier was struck only by the extraordinary general development of the hair of the various parts of the body. A month later, after an antiglycosuric treatment, the patient returned to his care, having only 6 gm. of sugar, and being in a favorable condition for an operation. Less scrupulously shaved than at the former visit, she had a heavy black beard and mustache. Her face was red and swollen; there was a slight exophthalmos and the frontoparietal baldness which is almost exclusively masculine; the limbs were very muscular, and the proportions were altogether masculine. The examination of the external genital organs showed a hypertrophy of the clitoris, which measured about 4 cm., and covered a decidedly developed prepuce. In questioning the patient, it was discovered that these phenomena had developed only since the menopause. The habits of the subject had undergone a like change; she cared for nothing but heavy manual labor—plowing, digging—which did not tire her in the least.

The operation showed, perhaps, the reason for this morphologic curiosity. For, in the course of the laparotomy, the examination of the suprarenal region brought to view a bilateral mass overhanging the kidneys, of a fibrolipomatous consistency. The left ovary had atrophied; on the right ovary there was a tumor the size of a large walnut, soft, hemorrhagic, without vegetations or cysts, and of a sort which Tuffier had never seen before. The uterus was neither fibromatous nor sclerotic, but simply in a state of pure muscular hypertrophy.

This symptomatic ensemble, which was known to the ancients, corresponds to the type called by Apert "hirsutism," by Gilbert Ballet and his pupil Gallais "suprarenal virility." It is seen particularly in female infants, and the symptoms are remarkable. This hyperfunctioning of the suprarenal gland manifests itself differently according to the age of the sufferer. If it hastens the growth of infants to abnormal proportions, it acts quite otherwise in the case of adults, particularly after the menopause, when the metabolism can affect only certain organs, and so provokes only hypertrichosis, hypersthenia and hypertrophy of the genitals.

These signs of virilism should suggest the possibility of a suprarenal tumor, for which an early operation may bring happy results.

Antityphoid Vaccination

The prefect of the Department of the Seine, invited by the Minister of the Interior to spread information about antityphoid vaccine and to facilitate its use, has just informed the doctors of his department by circular that he can furnish them with doses of vaccine if they need them. From the appearance of the first case of typhoid fever, if they think it best to vaccinate, they may get the vaccine either by addressing a request for it directly to the Laboratoire d'hygiène de la Ville de Paris, or by writing their request on the same card which is used to declare cases of contagious diseases.

Donation for Medical Museum at Lyons

The Faculté de médecine de Lyon is authorized to accept a donation made by Dr. Lacassagne, a former professor, of a sum of which the yearly interest, 450 francs ($150), shall be devoted to the use and development of the Musée historique de la médecine et de la pharmacie, built by the Faculté mixte de la médecine et de la pharmacie de Lyon.

BERLIN LETTER

BERLIN, May 22, 1914.

Rachitis and Overcrowding

The well-known Berlin pathologist, von Hansemann, *several years ago declared rachitis* to be a house disease caused by bad air and lack of exercise. Although this in no way indicates the essential cause, the investigations undertaken in this direction show more and more the importance of this view. Dr. George Levy, the vaccinator, has a very interesting article regarding this subject in the *Archiv für soziale Hygiene*. In 1,000 vaccinated children only 2.2 per cent. were found free from rachitis. The distribution of the illness and its severity are parallel to the density of the population in the respective localities in which the cases originated. The smallest number of cases was found in the homes of three rooms; 350 families who lived in two rooms, living-room and kitchen, and housing from two to thirteen persons had 350 rachitic vaccinated children. If these families lived in groups of three in the two rooms, there would be 25 per cent. *medium and* 7.3 per cent. very severe cases of rachitis. In groups of four, 35 per cent. and 5.9 per cent. severe; of six, 62 per cent.; of seven, 57 per cent. moderate, and 19 per cent. severe, and lastly of ten—here the figures are unduly small—66 and 17 per cent. If these figures are written under one another, it is distinctly seen how the frequency and severity of the illness rises with the overcrowding.

Annual Meeting of Neurologists and Alienists

At the annual meeting held at Lübeck, May 9, of the neurologists and alienists of northwestern Germany, general papers were read pertaining to the salvarsan therapy of syphilogenous nervous diseases, its dangers and possible complications.

EFFECT OF NEOSALVARSAN INJECTED INTO NERVOUS SYSTEM

The most interesting report was that by Dr. Jacob and Professor Weygandt of the large insane asylum, Hamburg (Friedrichsberg). Using monkeys for their experiments, they studied the pathologic changes in the nervous system that might result from intraspinal injections of neosalvarsan. They used a solution of 0.15 c.c. neosalvarsan in 100 c.c. 0.4 per cent. sodium chlorid solution.

Of this solution, one monkey received 1 c.c. intraspinally; two, 2 c.c. each, one, 0.4 c.c. and one, 0.2 c.c., the corresponding amount of fluid having been previously removed from the spinal canal. The first animal, with 3 c.c. showed no clinical symptoms, was well, and thirteen days later was killed. The macroscopic examination of the nervous system was negative. The second monkey (2 c.c.) killed ten days after the injection, showed neither clinical *symptoms nor macroscopic* changes in the nervous system. The third monkey (2 c.c.), however, expired the night following the experiment and the fourth animal (1 c.c.) became totally paralyzed two days after the injection (in the hind legs). It was killed seven days after the injection. The macroscopic findings were negative. The animal that received 0.4 c.c. showed paresis two days later and died three days later. The one that received 0.2 c.c. died two days after the injection.

Microscopic changes in the nervous system could be detected in every one of the animals, even in those that gave no clinical symptoms. The parenchymatous changes in the nervous system were very marked, and in the monkey that received 1 c.c., focal lesions were found even in the medulla. The lumbar portion of the spinal cord was affected most.

Two monkeys received each 2 c.c. of the same neosalvarsan solution, intracerebrally and subdurally. One succumbed three days after the experiment; the other developed left hemiparesis the next day, and two days afterward had severe epileptic attacks. The paralytic phenomena and the epileptic fits increased in severity during the following days, and on the sixth day the animal died. In this animal a hemorrhage was found at the place of the injection, and pathologic *changes in the brain* and *spinal* cord. The other animal showed such changes only at the place of the injection. Finally, two more monkeys were injected with a 0.15:300 solution of neosalvarsan. The doses were 0.6 c.c. subdurally, and 0.4 c.c. intraspinally. No clinical symptoms resulted and the microscopic examination of the animals, killed, respectively, seven and twenty-four days later showed an intact nervous system.

The conclusions Jacob and Weygandt draw from their experiments is that neosalvarsan in very concentrated solutions is dangerous, but in weak solutions is practically harmless.

Marriages

P. A. SURG. ROBERT A. HERRING, U. S. P. H. S., to Miss Emily Humbar White, at the Marine Hospital, New Orleans, June 4.

P. A. SURG. JASPER VICTOR HOWARD, U. S. N., to Miss Prudence Estelle Wyman of Olympia, Wash., May 28.

SIDNEY HERMAN ADLER, M.D., New York City, to Miss Elsie Tobias of Far Rockaway, L. I., N. Y., June 10.

CAPT. WILLIAM A. WICKLINE, M. C., U. S. A., to Miss Grace Gooding of Washington, D. C., May 5.

JERE LAWRENCE CROOK, M.D., Jackson, Tenn., to Miss Millian Cooke Green of Elk Hill, Va., June 17.

BUFORD COSBY BIRD, M.D., Colquitt, Ga., to Miss Chevis Evans Strong of Montgomery, Ala., June 17.

LEWIS A. BUCHMAN, M.D., Canton, Ohio, to Miss Molly Jane Reed of North Industry, Ohio, June 1.

WILLIAM LEMUEL BENEDICT, M.D., Fresno, Cal., to Miss Edith H. Betz of Adrian, Mich., June 2.

JOHN PARKER LOUDON, M.D., to Miss Florence Ellen Jones, both of North Yakima, Wash., June 4.

LEWIS JOHN POLLOCK, M.D., Chicago, to Miss Katherine Percy of Galesburg, Ill., June 6.

JAMES B. LOWRY, M.D., Atlanta, Ga., to Miss Mertie I. Gracy of Lakeland, Fla., May 11.

HOWARD RISK, M.D., Waverly, Ia., to Miss Letha Margaret Kint of Oelwein, Iowa, June 3.

H. H. HORNBECK, M.D., to Miss Ora Stanford, both of Kingston, Okla., May 23.

ARNOLD GARLITZ, M.D., St. Louis, to Miss Elsie Sureth of Wilmette, Ill., June 2.

Deaths

William F. Robeson, M.D. University of Pennsylvania, Philadelphia, 1885; a member of the Medical Society of the State of Pennsylvania; and an ophthalmologist of high rank; formerly president of the Allegheny County Medical Association; ophthalmic surgeon to the Pittsburgh Eye and Ear Hospital, Mercy Hospital, Children's Hospital and Pittsburgh Hospital; ophthalmologist to the Western Pennsylvania Institution for the Blind; oculist for the Pennsylvania, Baltimore and Ohio, and Pittsburgh and Lake Erie railroads; formerly surgeon of the Eighteenth Infantry, N.G., Pa.; died at his home in Pittsburgh, June 3, aged 50.

James Augustus Blake, M.D. Albany, N. Y., Medical College, 1868; College of Physicians and Surgeons in the city of New York, 1869; of Brooklyn; a member of the Medical Society of the State of New York; and a specialist in diseases of the eye, ear, nose and throat; formerly a member of the staff of Charity Hospital, and Manhattan Eye and Ear Hospital, New York City, and the Methodist Episcopal Hospital, Bedford Dispensary and Hospital, and Brooklyn Eye and Ear Hospital; died at his home in Brooklyn, June 9, from cerebral hemorrhage, aged 71.

Dan Millikin, M.D. Miami Medical College, Cincinnati, 1875; a member and once president of the Ohio State Medical Association; formerly professor of materia medica and medical jurisprudence in his Alma Mater; prominent as a physician and writer of Ohio; president of the Hamilton Board of Education; died at his home in Hamilton, June 5, from arteriosclerosis, aged 69.

D. Winton Dunn, M.D. American Medical College, Eclectic, St. Louis, 1890; formerly mayor of Duquoin, Ill.; while alone in his office in Duquoin, June 6, was shot by a coal miner who owed him a bill, and whose child he is said to have refused to treat on that account. Dr. Dunn was taken to St. Louis on a special train, but died from his injuries, June 7, aged 62.

William C. Gilmour, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1882; of Oakland, Ore.; died at his home in that city, May 9, from heart disease, aged 54.

Leland Madden Baker, M.D. Boston University School of Medicine, 1894; died at his home in Lynn, Mass., May 27, from nephritis, aged 45.

George Dallas Nutt, M.D. University of Pennsylvania, Philadelphia, 1869; a prominent citizen of Williamsport, Pa.; one of the organizers of the Williamsport Hospital, and of the Williamsport Private Hospital; for many years dean of the post-graduate school connected with the institution; a Fellow of the American Medical Association; died at his home, May 30, aged 69. The Lycoming County Medical Society at a special meeting, decided to take action on the death of Dr. Nutt, and to attend his funeral on foot in a body.

Amos Lawrence Mason, M.D. Harvard Medical School, 1872; a member of the Massachusetts Medical Society; for twenty years senior physician at the Boston City Hospital; formerly assistant professor, and professor in his Alma Mater; an authority on contagious diseases; and one of the most prominent practitioners of Boston; died suddenly at Menand's, near Albany, N. Y., June 5, from heart disease, aged 72.

Burchard H. Roark, M.D. Rush Medical College, 1903; a Fellow of the American Medical Association, and county physician of Spokane, Wash.; a veteran of the Spanish-American War; while attempting to cross the track of an electric railway near Coeur d'Alene, Ida., in his motor car, May 30, was struck by a train and instantly killed, aged 37.

William L. Grant, M.D. Jefferson Medical College, 1856; surgeon of volunteers during the Civil War; and one of the members of the Wheeling Convention which laid the plans for the State of West Virginia, and also a member of the second convention, which completed those plans; died at his home in Grafton, W. Va., June 2, aged 92.

Francis Bishop Harrington, M.D. Harvard Medical School, 1881; a Fellow of the American Medical Association and American Surgical Association; for many years chief surgeon to the Massachusetts General Hospital; lecturer on surgery at Harvard Medical School; died at his home in Brookline, Mass., June 8, aged 60.

Eugene A. Wheeler, M.D. Denver College of Medicine, 1893; a Fellow of the American Medical Association; surgeon to the L. V. and T. Railroad, and to St. Mary's Hospital, Goldfield, Nev., aged 47; while returning from a meeting in Tonopah, Nev., June 9, was instantly killed by the overturning of his automobile.

Frank Delmont Humphrey, M.D. University of Iowa College of Homeopathic Medicine, Iowa City, 1891; died at his home in Baker, Oregon, May 19, from nephritis, aged 50.

William Justus Jones, M.D. McGill University, Montreal, 1856; one of the oldest and best-known practitioners of Ontario; died at his home in Prescott, May 19, aged 81.

Battle Clark, M.D. Physio-Medical College of Indiana, Indianapolis, 1893; died at his home in New Haven, Ind., May 28, from malignant disease, aged 60.

Robert R. Norris, M.D. University of Maryland, Baltimore, 1878; for thirty years a practitioner at Parkton, Md.; died at his home in that city, May 23, aged 63.

Bernard St. Elmo Ryan, M.D. University of the South Sewanee, Tenn., 1908; died at his home in Philomont, Va., May 25, from heart disease, aged 38.

John A. Jeffries (license, Illinois, 1878). For half a century a practitioner of Rinard, Ill.; died at his home in St. Louis, May 26, aged 80.

George R. Snyder, M.D. Jenner Medical College, Chicago, 1907; of New York City; died in a hospital in San Antonio, Texas, May 25, aged 40.

Charles Murray, M.D. Philadelphia University of Medicine and Surgery, 1864; died at his home in Edwards, N. Y., May 25, aged 82.

Emma J. Roberts, M.D. Minneapolis College of Physicians and Surgeons, 1901; died at her home in Chicago, May 24, aged 48.

William H. Ribble, M.D. New York University, New York City, 1859; died at his home in Wytheville, Va., May 21, aged 79.

Elisha L. Day, M.D. Tulane University, New Orleans, 1872; died at his home in Dallas, Texas, May 24, aged 63.

Edward Joseph O'Brien, M.D. Rush Medical College, 1906; of Chicago; died in West Baden, Ind., June 5, aged 34.

John O. Eberhard, M.D. Jefferson Medical College, 1873; died at his home in Philadelphia, May 29, aged 63.

Frank Love Kiley, M.D. Jefferson Medical College, 1893; of Philadelphia; died about May 22, aged 45.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

POLLUTING THE STREAM AT ITS SOURCE

From day to day, the physician is a recipient, either willing or unwilling, according to his time and ability, of a free postgraduate course in therapeutics. First in importance comes the detail man with his well-memorized "story." Then the doctor is invited to hang on his office walls a host of multicolored advertising posters. He is deluged with enough advertising blotters to absorb an ocean of ink. Through the mails come pamphlets, packages and writeups by men who were failures as physicians. When at last the doctor dies, the unwitting distributors of the literature continue to deluge his home and family with drugs and advertisements until time has worn his name from every medical directory and distributing agent's list.

Physicians, of course, know all this. They may not know, however, that the student, before his graduation, is initiated into this proprietary educational system. It is true that this early appeal is also diminishing. But as proof that a few manufacturers still continue the methods, witness the following correspondence:

"*To the Editor:*—I enclose two letters which I have received recently. They are the most impudent of the many with which I have been deluged. It seems that their scheme of offering the president or secretary of the graduating class a commission is successful sometimes, for several of these patent medicine houses have written as an encouragement, that at such and such a medical school the president had cleared $40 on the proposition, etc. From this, and from the cool effrontery with which these houses write, it seems that the students of a number of medical schools are not enlightened on the subject of proprietary medicines. This is a serious reflection on their teachers and emphasizes the importance of teaching the social and ethical, as well as the scientific aspects of medicine. There is very little of such instruction at present.

"Ernst Boas,
"Secretary Senior Class, Columbia University, College of Physicians and Surgeons."

Enclosed with the foregoing were the following letters:

"Secretary Senior Class, Dept. of Medicine.
"Dear Doctor:

"It has been our practice for a great many years, in January, to furnish all Seniors and members of graduating medical classes with one of our regular $1.00 Outfits, containing an *improved oil Nebulizer,* a *Pipet* and *bottle of Pineoleum* (formula in upper left hand corner of this letter-head) without cost and *with our compliments.*

"It is also our practice to pay each Secretary or President (whoever makes the distribution) five cents for each receipt furnished us, giving the full name and home address of each member of the class and the faculty, thereby showing that he has delivered to each, one of our Outfits. We ship the goods by prepaid express to the College and when the receipts showing the deliveries, have been returned we forward our check as per the above.

"If you will kindly give us an immediate reply (in the enclosed stamped envelope) indicating whether or not you will attend to the matter for us and informing us of the number of men in the graduating class and faculty, we will at once take up the matter with you further.

"Very truly yours,
"The Pineoleum Company."

"Secretary, Senior Class, Columbia University College of Physicians and Surgeons.
"Dear Doctor:

"It is our intention to present each of the members of the senior class with a copy of our 400 page cloth bound library edition price-list containing a section on clinical suggestion which should make it of interest and value to each of them. With the list we shall include a sample copy of the *American Journal of Clinical Medicine* and our recent issue of 'Helpful Hints for the Busy Doctor,' both of which are of undoubted interest and value.

"So that we may continue mailing our 'Helpful Hints' from time to time, we desire the names and permanent home addresses of each member of the senior class and if you will furnish us with this information we shall present you or the student whom you may select to compile the list and distribute the samples, a 12-vial emergency case filled with active principles suitable for this class of practice.

"On receipt of the list of names we shall forward the above mentioned printed matter by prepaid delivery to either yourself or the student appointed.

"Assuring you of our appreciation of any courtesy you may show us, and of our desire to reciprocate in any way possible, we are, with regards,

"Very truly yours,

"FRANK B. KIRBY, M.D.,

"*The Abbott Alkaloidal Company*, Department of Sales.

"P. S. We have interesting proposition whereby a live-wire student, preferably in the senior class, can make some money with but little effort and with no loss of time."

The way to get rid of these attempts to debauch the young graduate is indicated in our correspondent's words: "It seems that the students of a number of medical schools are not enlightened on the subject of proprietary medicines." There is need in every school not only of an intensive course in what is worthy and efficient but also of demonstrations and lectures on proprietary methods and "What Not To Prescribe."

CONVICTIONS UNDER THE FOOD AND DRUGS ACT

BEEF, WINE AND COCA

Warren Sutliff, G. W. Case, J. Weinkauff and Ensley J. Case, who did business under the firm name of Sutliff, Case & Co., Peoria, Illinois, shipped in interstate commerce a quantity of so-called beef, wine and coca. According to the label, the product contained alcohol 15 per cent. and cocain 1/5 of a grain to each fluid ounce. When analyzed by the government chemists, the stuff was found to contain not 15 per cent. of alcohol, but 23.75 per cent. It was, accordingly, declared misbranded. The defendants pleaded guilty to the charge and were fined $10 and costs.—[*Notice of Judgment No. 2213.*]

MALT NUTRINE

The Anheuser-Busch Brewing Association sold, in violation of the Food and Drugs Act, a quantity of "Malt Nutrine," which the government officials declared was misbranded. The label bore such claims as:

> "Alterative, Nutritive, Tonic, Strengthening, Invigorating, Sedative."
> "A Non-intoxicant Sparkling Concentrated Liquid Extract of Malt and Hops."
> "Makes Blood and tissue. Aids digestion. Lends strength to the weak. Triumphs over disease. Nourishes the convalescent."
> "Rests the brain and quiets the nerves. It is invaluable to nursing mothers. Nothing like it for teething children. Enriches the blood and builds up the system."
> "A concentrated extract of Malt of Acknowledged Merit."

The label was declared misleading and false in that the claim "highly concentrated extract of malt" signified that the product was a pure extract of malt concentrated, when analysis proved that it was not, but consisted of other ingredients than malt, to wit: Alcohol, 1.6 per cent., and extractive matters from hops. The company pleaded guilty and a fine of $50 was imposed.—[*Notice of Judgment No. 2310.*]

MANADNOCK LITHIA SPRING WATER

S. A. Scammon of Temple, N. H., shipped in interstate commerce a quantity of Manadnock Lithia Spring Water. Some of the claims made for this product were:

> "The most wonderful natural Lithia Spring water now known in the world."
> "Recommended for Gout, Dyspepsia, Rheumatism, Eczema, Sugar Diabetes, Bright's Disease, Gall Stones; also reduces temperature in all fevers; and all diseases of the kidneys, asthma, etc."
> "As beautifier of the complexion, it has no equal."

This so-called lithia water was declared misbranded, as it contained only an unweighable trace of lithium and not enough to warrant the water being classed as a lithia water. Scammon entered a plea of *nolo contendere* and was fined $15.—[*Notice of Judgment No. 2814.*]

BUCKHORN LITHIA WATER

A quantity of "Buckhorn Lithia Water" was shipped by a company of the same name from Henderson, N. C., into Georgia. The labels on this product contained the following statements:

> "This water has the highest scientific endorsement as a cure for catarrh of stomach or bowels, constipation and indigestion."
> "Beneficial in all fevers, especially typhoid."
> "It gives the quickest relief in all uric acid troubles, thick or discolored urine, stone in bladder, pain in urinating."
> "It cures kidney and bladder troubles, sciatica, rheumatism and gout."

The water was declared misbranded by the federal authorities, first, because of the false statements regarding curative effect, and, second, because while called a lithia water, it did not in fact contain enough lithium to give the therapeutic effect of lithia water. The company pleaded guilty and the court suspended sentence on payment of costs.—[*Notice of Judgment No. 2709.*]

SUN-RAY SPARKING WATER

"Sun-Ray Sparking" was a water claimed to be "the world's purest spring water," marketed by the Sun-Ray Water Company of Ellenville, N. Y. The label bore a picture of a stream of water flowing out of a tunnel, and under the picture was the description, "Famous Sun-Ray Spring Tunnel, Ellenville, N. Y." This water was declared misbranded by the federal authorities in that the label indicated that the product was a natural spring water. As a matter of fact, it was water to which sodium chlorid (common salt), sodium bicarbonate (baking soda), and carbon dioxid (carbonic acid gas) had been added. The Sun-Ray Water Company pleaded guilty and was fined $50.—[*Notice of Judgment No. 2481.*]

HICCURA MINERAL WATER

P. F. Panabaker of Omaha, Nebraska, trading under the name "Hiccura Mineral Water Company," shipped in interstate commerce, a quantity of mineral water which the federal authorities declared misbranded. The following claims were made for the stuff:

> "Natural Mineral Water."
> 'Pure Natural Remedy."
> "Hiccura Mineral Water is the strongest and most perfect of Natural Waters."

The federal authorities declared the water misbranded in that the "Hiccura Mineral Water" was not a "natural" water, but an artificial mineral water, containing ferric sulphate, 84 grams per liter, and aluminium sulphate 21 grams per liter. Panabaker pleaded guilty and was fined $15 and costs. [*Notice of Judgment No. 2380.*]

Association News

CLINICAL INFORMATION BUREAU IN NEW YORK

Fellows of the American Medical Association and other visiting physicians will be cordially welcomed at the clinics which are daily held in the hospitals of New York City. An information bureau has been established in the New York Academy of Medicine. The details of about fifty operative clinics are posted there daily.

Propaganda in the Public Schools against Medical Frauds.—A unique method of propaganda against patent medicines and medical frauds has been inaugurated in the high schools at La Fayette, Ind. An effort is being made to inform the pupils, and through them the families from which they come, regarding various medical frauds. The plan was originated by Professor Pierson of the department of physiology. Pupils were requested to bring to school all newspaper advertisements of patent medicines and "quack" doctors. The iniquity of this form of advertising and the absurdity of the claims of the patent-medicine men and the "quack" doctors were explained to them. Great enthusiasm was shown and literature concerning the subject was gathered by the students in physicians' offices and elsewhere. Special attention was drawn to the dangers of medicines containing habit-forming drugs. This novel method should be highly effective in teaching the public the evils of patent medicine and quackery.—Correspondence, *Indiana State Med. Jour.*

Correspondence

Sudden Blanching of the Hair

To the Editor:—In an editorial in The Journal, May 30, 1914, p. 1726, on the growth and color changes of the hair, sudden blanching of the hair is put down as "mythical," and Stieda's views are accepted that the hairs turn gray only as new hairs without pigment grow. "No sudden mutations are found when accurate observations are instituted."

Stieda's reasoning to my mind is not convincing, and I believe that with our ignorance of the factors controlling pigment formation in the skin we are in no position to dogmatize on this subject—certainly in no position to cast aside as unreliable cases because they do not square with our present notions. Most of the recorded cases of this sort are old, but we are not the first generation of reliable observers, and it does not require modern instruments of precision to make a diagnosis of gray hair. I would offer in evidence on this point one modern case, which so far as I know has not appeared in the literature of this subject. It is the following:

> "Perhaps you will allow me to digress for a moment to mention to you a very remarkable illustration of the latter fact—increased pigmentation in the vicinity of its diminution. I have mentioned the case elsewhere, but it will probably be new to you. It is that of a man who had traumatic meningeal hemorrhage over the left hemisphere. As a result of this, during the three days he lived after the injury, the right, opposite half of the hair of his head and of his brown moustache and beard became blanched so as to be almost white. The change was watched during life and carefully noted after death. It was like that which has been described as the result of profound emotion, but it was due here to a physical agency. It can only be explained by assuming that the disordered innervation so changed the secretion at the roots of the hair as to produce a material capable of ascending the hairs and discharging their pigment. But after death we noticed another thing, which leads me to mention the case. The very gray, almost white, right half of the beard was separated from the brown left half by a narrow vertical line, or narrow zone, in the middle line, in which the hair had become almost black. Apparently where the disordered influence ceased in its extreme degree, at the blending of the innervation of the two sides, a change in the pigmentary process had occurred of the opposite character. Mysterious as the fact is, and perhaps impossible to explain, it illustrates the close relation between the plus and the minus in pigmentary processes." (Clinical Lectures, by Sir William Gowers, M.D., F.R.S., 1904, p. 153.)

One positive fact of this sort will of course knock down a whole theory based on negative reasoning, and I do not believe that this case can be brushed aside as a myth. Sir William Gowers is not an ancient; he belongs in the forefront of modern neurology—certainly a field whose workers are trained to guard against deceptions—and he has standing as a clinical observer.

"The change was watched during life and carefully noted after death"; and not only that, but hyperpigmentation of bordering hair occurred.

In the face of this observation—leaving all others out of consideration—I believe we are compelled to accept the fact that sudden blanching of the hair may occur. And I am aware of nothing that makes the acceptance of this observation a shock to our knowledge of skin pigment. As a matter of fact, sudden macroscopic changes in the skin's pigment—and the hair's pigment is the same—are not excessively rare observations. As recently as the May meeting, this year, of the American Dermatological Association, Hazen of Washington referred to the sudden appearance of patches of leukoderma in a negro ill in hospital under constant observation; in this case patches of white skin appeared on the abdomen within thirty-six hours. Carmichael mentioned a similar case. How such a change could occur we are at a total loss to explain; but that has nothing to do with the fact.

William Allen Pusey, M.D., Chicago.

Preventive Inoculations for Typhoid

To the Editor:—In the Current Comment on "Typhoid Prevention among Seamen" (The Journal, May 16, 1914, p. 1563), the following statement is made: "So far, preventive inoculations for typhoid have been used only in military and naval circles and in hospital work among physicians and nurses. The results have been so favorable that it would seem to be time to secure the introduction of the practice of typhoid immunization to the public." It may interest you to know that the North Carolina State Board of Health has been providing free typhoid vaccine since early in January of this year, and that as whole-time county health officer for Sampson County, I have since January 16 given free preventive inoculation to 258 persons, mostly white, with a few negroes, both sexes, ages ranging from 4 to 61 years, from almost every walk in life. I have many engagements to continue the work on through the summer, and at the end of the year I expect to have some valuable data on the subject. I am not writing this as a criticism, but simply to report the activity going on in an obscure rural county.

G. M. Cooper, M.D., Clinton, N. C.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SPAHLINGER TREATMENT OF TUBERCULOSIS

To the Editor:—Do you know anything about the new cure for tuberculosis as described by Henry Spahlinger to the Academy of Medicine, Paris, April 28, to be a mixture of antigens and ferments?

W. W. Dill, M.D., Redlands, Cal.

Answer.—The *Bulletin de l'Académie de médecine*, May 4, 1914, gives the following statement:

"PRESENTATION OF MANUSCRIPTS AND PRINTED WORKS

"M. Letulle: I have the honor to present a preliminary note entitled 'The Treatment of Tuberculosis by the Method of Henry Spahlinger,' addressed to the academy by Dr. Edmond Lardy of Geneva, Dr. Colbeck, physician of the Hospital of the City of London for Diseases of the Chest, and Dr. L. Williams, physician of the French hospital in London.

"The method consists of a series of intramuscular injections of a combination of tuberculous antigens and ferments. This specific treatment is reinforced by an adjuvant treatment consisting of ferments combined with lipoids which are administered intramuscularly or intravenously. In fifty-four cases of pulmonary tuberculosis, all of the open variety treated for some months by this method, seventeen at the present time have shown marked amelioration. The signs of ulceration have disappeared and bacilli no longer exist in the sputum and there is continuous apyrexia.

"Before treating human tuberculosis, H. Spahlinger had, furthermore, obtained remarkable success experimentally on tuberculous guinea-pigs. More than twenty recoveries led him to make his first trials on man. (Assigned to M. Letulle for examination.)"

The statement given in the preceding quotation must be regarded merely as the claims of the author of the treatment.—Ed.

RAYMOND'S PECTORAL PLASTERS—SETON FOR MIGRAINE—ACTION OF ACETANILID, ANTIPYRIN AND PHENACETIN—SCOPOLAMIN ADDICTION

To the Editor:—1. Please inform me as to the composition or therapeutic action, if any, possessed by Raymond's Pectoral Plasters, which are "guaranteed to cure" whooping-cough. They are made by Raymond & Co., 200 Williams Street, New York City. Has it ever been investigated by The Journal's Propaganda for Reform? Please give some information on this "cure" if you can do so, as it is being exploited in this locality not only by druggists, but by physicians as well.

2. What does Osler really mean in his closing statement relative to the treatment of migraine, viz: "And lastly, in obstinate cases, an ordinary tape seton may be inserted through the skin at the back of the neck, to be worn for three months, a plan of treatment which has the strongest possible recommendation from Mr. Whitehead of Manchester (Osler: Practice of Medicine, D. Appleton & Co., Ed. 7, 1911, p. 1068).

Would there not be serious danger of infection or inflammation from leaving the seton in place so long? Is this a safe procedure to try in such cases?

3. Is there any real difference in the action of acetanilid, antipyrin and phenacetin on the central nervous system, other than a difference in the intensity of their action?

4. Is there much danger of acquiring a habit for hyoscin where the drug is being administered continually in doses of from 3/100 to 1/20 grain daily? What is the danger compared with equivalent doses of morphin administered to a male patient 68 years old?

Chester Demaree, M.D., Trafalgar, Ind.

Answer.—1. We have no information as to the composition and action of Raymond's Pectoral Plasters. The advertising matter in our files shows that the plasters are fraudulently exploited. For further information regarding this nostrum, see "Nostrums and Quackery," p. 689, or The Journal, June 3, 1911, p. 1671, under the head of "Press Clippings and Nostrum Enterprise."

2. We must take the quotation to mean what it says. The introduction of a seton was formerly much used for the purpose of exciting a lasting counterirritation. The seton is applied by drawirg a single large thread or a skein of threads through an opening made in the skin. There is, of course, some danger of infection in making such a wound, but if care be taken to have the materials aseptic, the danger of absorption of toxins or spread of the infection would be comparatively slight. The method is, however, scarcely to be recommended, and we notice that Osler has omitted all reference to it from the eighth edition, 1912, of his work on the Practice of Medicine.

3. No.

4. So far as we know, an addiction to scopolamin (hyoscin) has not been observed to any considerable extent. The danger of inducing such a habit would be far less than with morphin. Scopolamin acts more by depressing the motor area than by its effect on the sensory portion of the brain.

REFERENCES TO ABLATIO PLACENTAE

To the Editor:—Please give me some data or references in regard to "Concealed Internal Hemorrhage" or "Ablatio Placentae" named by Holmes.

A. S. Rose, M.D., Fayetteville, N. C.

Answer.—The following is a list of references to the subject:

Holmes, R. W.: Two Cases of Ablatio Placentae, *Am. Jour. Obst.*, 1903, xlviii, 519.
Holmes, R. W.: Ablatio Placentae, A Study Based upon Two Hundred Cases in the Literature, *Am. Jour. Obst.*, December, 1901 (complete bibliography).
De Lee, J. B.: A Case of Fatal Hemorrhagic Diathesis with Premature Detachment of the Placenta, *Am. Jour. Obst.*, December, 1901.
Bubis, J. L.: Hemorrhage from Premature Separation of Normally Situated Placenta, with Report of Cases, *Cleveland Med. Jour.*, July, 1912; abstr. The Journal, Aug. 24, 1912, p. 677.
Champetier de Ribes and Couvelaire, A.: Treatment of Hemorrhage from Abnormally Situated Placenta, *Ann. de gynéc. et d'obst.*, April, 1911.
Barchet, P.: Premature Separation of Normally Located Placenta with Hemorrhage, *Beitr. z. Geburtsh. u. Gynäk.*, 1912, xvii, No. 2; abstr., The Journal, July 13, 1912, p. 150.
Wells, W. H.: Partial Detachment of a Normally Situated Placenta —Concealed Intra-Uterine Accidental Hemorrhage, *Therap. Gaz.*, December, 1910.
Fraipont, M.: Rupture of Superficial Layers of Body of Uterus in Case of Premature Separation of Normally Located Placenta, *Ann. de gynéc. et d'obst.*, April, 1914; abstr., The Journal, June 6, 1914, p. 1847.

FRACASTORIUS ON SYPHILIS

To the Editor:—Will you kindly publish in an early issue the English version of the famous Latin poem of the Italian physician Fracastorius, written in 1530, in which the disease syphilis is first referred to? This poem, now of great historical importance, is not available to the general practitioner, and I think that its publication would be appreciated by the other readers of The Journal as well as myself.

Paul E. Greenleaf, M.D., Bloomington, Ill.

Answer.—The celebrated poem of Hieronymus Fracastor is now about four centuries old. To its author is due the credit of having given to this disease the name which has supplanted all others and is to-day in universal use. While the poem is filled with mythological allusions it affords a good clinical description of the symptoms of the disease. It is a version in verse of a small prose treatise published by the author in 1548, entitled "De Contagionibus et Contagiosis Morbis." A translation in prose was issued by the Pilman Company, St. Louis, in 1911, for $2. It is a booklet of fifty pages. In his little essay entitled "An Alabama Student," Sir William Osler gives an account of Fracastorius with extracts from the poem. The great length of the work prevents its complete publication in The Journal.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama: Montgomery, July 14. Chairman, Dr. W. H. Sanders, Montgomerv.
Alaska: Juneau, July 7. Sec., Dr. Henry C. De Vighne, Juneau.
Arizona: Phoenix, July 7-8. Sec., Dr. John Wix Thomas, Phoenix.
Colorado: Denver, July 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.
Connecticut: New Haven, July 14-15. Sec., Dr. Chas. A. Tuttle, New Haven. Homeopathic: New Haven, July 14. Sec., Dr. Edwin C. M. Hall, New Haven. Eclectic: New Haven, July 14. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.
Illinois: Chicago, June 23-25. Sec., Dr. C. St. Clair Drake, Springfield.
Indiana: Indianapolis, July 14-16. Sec., Dr. W. T. Gott, State House, Indianapolis.
Maine: Augusta, July 7-8. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.
Massachusetts: Boston, July 14-16. Sec., Dr. Walter P. Bowers, Room 159 State House, Boston.
Montana: Helena, June 30-July 2. Sec., Dr. Wm. C. Riddell, Helena.
New Hampshire: Concord, July 1-2. Regent, Mr. H. C. Morrison, Concord.
New Mexico: Santa Fe, July 13. Sec., Dr. W. E. Kaser, East Las Vegas.
New York: June 23-26. Chief of Examinations Division, Mr. Harlan H. Horner, Department of Education, Albany.
North Dakota: Grand Forks, July 7. Sec., Dr. G. M. Williamson, Grand Forks.
Oklahoma: Oklahoma City, July 14. Sec., Dr. John W. Duke, Guthrie.
Oregon: Portland, July 7-9. Sec., Dr. L. H. Hamilton, Medical Bldg., Portland.
Rhode Island: Providence, July 2-3. Sec., Dr. Gardner T. Swarts, State House, Providence.
South Dakota: Deadwood, July 14. Sec., Dr. Park B. Jenkins, Waubay.
Texas: Austin, June 23-25. Sec., Dr. W. L. Crosthwait, Waco.
Utah: Salt Lake City, July 6-7. Sec., G. F. Harding, 405 Templeton Bldg., Salt Lake City.
Vermont: Burlington, July 14-17. Sec., Dr. W. Scott Nay, Underhill.
Virginia: Richmond, June 23-26. Sec., Dr. J. N. Barney, Fredericksburg.
Washington: Seattle, July 7. Sec., Dr. C. N. Suttner, Baker Bldg., Walla Walla.
West Virginia: Elkins, July 1. Sec., Dr. S. L. Jepson, Wheeling.
Wisconsin: Milwaukee, June 29. Sec., Dr. John M. Beffel, 3200 Clybourn St., Milwaukee.
Wyoming: Laramie, July 9-11. Sec., Dr. H. E. McCollum, Laramie.

Special Preparation for Ophthalmologists

A statement from the University of Minnesota Medical School says that a course for the preparation of specialists in ophthalmology, covering a period of two or three years is to be offered, this course to start July 1, 1914. Opportunity will also be provided for a course in otology, laryngology and rhinology to be taken at the same time. It is planned to grant a suitable degree in ophthalmology at the expiration of the service, provided the work done is satisfactory. The plan provides for a systematic training, covering laboratory branches so far as they are related to ophthalmology, and the intention is to give the student a good foundation in these allied subjects, both laboratory and clinical, including anatomy, physiology, pharmacology, pathology, bacteriology, general medicine, surgery, experimental and clinical, neurology and other clinical branches.

It is the intention thus to broaden the foundation of the student undertaking these specialties. During this period he will have opportunity for such work as is required clinically in eye, ear, nose and throat. It is expected that this course will prepare the student more quickly and in a better manner in subjects related to ophthalmology than would be the case were the physician to enter on a long period of general practice in which he is obliged to do much work which later will be of little or no value in the practice of his specialty. There is one teaching fellowship offered of $500 for the first year, and it is expected that the amount of the fellowship will be somewhat larger for the second year of service.

Maine March Report

Dr. Frank W. Searle, secretary of the Maine Board of Registration of Medicine, reports the written examination held at Portland, March 10-11, 1914. The number of subjects examined in was 10; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 16, of whom 13 passed and 3 failed. Five candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
George Washington University	(1912)	87
Medical School of Maine	(1913)	78
Baltimore Medical College	(1913)	79
College of Physicians and Surgeons, Baltimore	(1912)	77
College of Physicians and Surgeons, Boston	(1912)	76
Harvard University	(1893) 81; (1900) 88; (1909)	93
Tufts College Medical School	(1912) 77; (1913)	80
Jefferson Medical College	(1913)	91
University of Vermont	(1913)	84
McGill University	(1901)	84

FAILED

College	Year Grad.	Per Cent.
Coll. of Phys. and Surgs., Boston	(1909) 71; (1911) 72; (1912)	63

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
University of Colorado	(1913)	Colorado
Chicago College of Medicine and Surgery	(1913)	Illinois
Tufts College Medical School	(1894)	Texas
University of Vermont	(1907) Vermont; (1912)	Vermont

California Reciprocity Report

Dr. Charles B. Pinkham, secretary of the Board of Medical Examiners of the State of California, reports that 39 candidates were licensed through reciprocity and 1 by motion of the board, Dec. 8-10, 1913. The following colleges were represented:

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Coll. of Phys. & Surgs., Los Angeles	(1906) Arizona; (1913)	Wisconsin
Cooper Medical College	(1906)	Oregon
Denver College of Medicine	(1902)	Penna.
University of Colorado	(1896)	Washington
Georgetown University	(1906)	Utah
Chicago Homeopathic Medical College	(1903)	Iowa
Hahnemann Med. Coll. & Hosp., Chi.	(1902) Iowa; (1905)	Illinois
Northwestern University	(1908) Illinois; (1912)	Illinois
Rush Medical College	(1909)	Illinois
University of Illinois	(1912)	Arizona
Keokuk Medical College	(1905)	Washington
University of Kansas	(1906)	Missouri
Tulane University	(1910)	Texas
College of Physicians and Surgeons, Baltimore	(1907)	Utah
Johns Hopkins University	(1901) Maryland; (1906) Maryland; (1909) Maryland; (1910) Maryland.	
Southern Homeopathic Medical College	(1904)	Maryland
Harvard University	(1902)	New York
Barnes Medical College	(1393)	Missouri
Beaumont Hospital Medical College	(1897)	New Mexico
Missouri Medical College	(1886)	S. Dakota
Columbia University, College of Phys. and Surgs.	(1907)	New York
Cornell University	(1913)	New York
New York Homeopathic Medical College and Hosp.	(1908)	New York
Cincinnati College of Medicine and Surgery	(1880)	Arizona
Ohio Medical University	(1906)	Ohio
Western Reserve University	(1905)	Mass.
Jefferson Medical College	(1902) Penna.; (1912)	Maine
Medico-Chirurgical College of Philadelphia	(1904)	New Jersey
University of Penna.	(1900) Penna.; (1902)	Penna.
Woman's Med. Coll. of Penna.	(1891) New Jersey (1912)	Penna.

Philippine Islands Report

Dr. C. E. Norris, secretary of the Board of Medical Examiners for the Philippine Islands, reports that 33 physicians were registered during the latter half of 1913. The following colleges were represented:

College	Grad.	Examined
Chicago College of Physicians and Surgeons	(1907)	1
Rush Medical College	(1904)	1
Tulane University	(1907)	1
Grand Rapids Medical College	(1902)	1
St. Louis University	(1905)	1
Jefferson Medical College	(1892)	1
University of the Philippines, Med. Dept.	(1913)	6
University of St. Thomas, Med. Dept.	(1913)	19
University of Strassburg	(1897)	1
Medical School of Kanazawa, Japan	(1910)	1

Book Notices

A Handbook of Useful Drugs. A Selected list of Important Drugs Suggested for the Use of Teachers of Materia Medica and Therapeutics and to Serve as a Basis for the Examination in Therapeutics by State Medical Examining and Licensing Boards. Prepared under the Direction and Supervision of the Council on Pharmacy and Chemistry of the American Medical Association. Cloth. Price 50 cents. Pp. 167. Chicago. American Medical Association Press, 1914.

The object of this book, published under the auspices of the Council on Pharmacy and Chemistry, as is well expressed on its title page, is to present "a selected list of important drugs suggested for the use of teachers of materia medica and therapeutics and to serve as a basis for the examination in therapeutics of state medical and examining boards." This object seems to have been achieved. The book is a valuable practical help toward a higher standard for medical therapeutics and medical education. Recognizing the fact that a too large number of drugs is detrimental to therapeutic progress and especially a hindrance to effective medical teaching, a committee of the Council on Medical Education of the American Medical Association prepared a list of the more important drugs in general use and submitted it to the National Federation of State Medical Examining and Licensing Boards with a view to securing the cooperation of that body in largely limiting examination for license to medicaments in this list. The drugs selected by the Council on Pharmacy and Chemistry for this book were chosen from the list described. The drugs are arranged alphabetically. The information given includes a physical and chemical description of the drugs together with their pharmacology, therapeutics, dosage and practical application.

It may be pointed out that the book includes the new and the old. Official drugs whose importance warrants their inclusion have been taken from the United States Pharmacopeia, and their physical and chemical description are in accordance with the official standards; the non-official drugs have been taken from New and Nonofficial Remedies.

Following the main text are tables of solubility, the classification of drugs according to their usage, lists of drugs that may cause eruptions of the skin, discolorations of the urine and feces and drugs that are excreted in the milk. A good index completes the book.

Every student should own a copy of "Useful Drugs" to aid him in bringing scientific laboratory pharmacology to practical application, and to help him to recognize the useless drugs that are still official in the Pharmacopeia, still appear in books on practice, and constantly occur in the medical journals.

Teachers and instructors in practical therapeutics will find the book of great value in the selection of the drugs that their students must be prepared on for hospital and licensing board examinations. The book represents a much-needed advance in therapeutics by tacitly repudiating a large number of useless drugs.

Benzol as a Leucotoxin. Studies on the Degeneration and Regeneration of the Blood and Hematopoietic Organs. By Laurence Selling, M.D. Monographs of the Johns Hopkins Hospital Report, New Series, No. 2. Paper. Price, $1. Pp. 60, with 3 illustrations. Baltimore: Johns Hopkins Press, 1913.

This pamphlet gives an exhaustive review of the action of benzol (benzene, C_6H_6), on the blood-making organs, particularly the bone-marrow and on the different varieties of blood-cells. Benzol is shown to destroy the cells of the bone-marrow until the blood-making tissue becomes aplastic; but the cessation of the injections leads to regeneration in the course of two or three weeks. Examination of the cells in the process of regeneration indicates, according to the authors, the possibility of a conversion of small lymphocytes into large lymphocytes and the further differentiation of the large lymphocytes into granulocytes, erythroblasts and megacaryocytes. The conversion of erythroblasts to erythrocytes is conceived of as a physiologic process consisting in a wandering of the nucleus out of the cells.

Miscellany

The Patent Medicine Problem

An article by M. I. Wilbert (*Jour. Am. Pharm. Assn.*, 1914, iii, 572) discusses the patent-medicine problem from the pharmaceutical point of view and presents a review of some of the opinions expressed and resolutions adopted by members of the American Pharmaceutical Association during the sixty or more years of the existence of that organization.

If resolutions were as potent for good as their proposers would have them to be, the patent-medicine problem would long since have ceased to exist. Even so, however, it is pleasing to learn that pharmacists as a class have consistently opposed quackery and fraud as represented by the nostrum business and have repeatedly gone on record as favoring the degree of publicity necessary to give the purchaser a fair knowledge of the composition of the medicine he is buying. It is interesting to note, for instance, that at the second meeting of the American Pharmaceutical Association the following resolutions were adopted:

> *Resolved*, That the American Pharmaceutical Association believes that the use and sale of secret or quack medicines is wrong in principle and is, in practice, attended with injurious effects to both the profession and the public at large, and believes it to be the duty of every conscientious druggist to discourage their use.
>
> *Resolved*, That this association earnestly recommend to our pharmaceutical brothers to discourage by every honorable means the use of these nostrums; to refrain from recommending them to their customers; not to use any means of bringing them into public notice; not to manufacture or to have manufactured any medicine the composition of which is not made public, and to use every opportunity of exposing the evils attending their use and the false means which are employed to induce their consumption (*Proc. Am. Pharm. Assn.*, 1853, p. 17).

Three decades later (*Proc. Am. Pharm. Assn.*, 1885, xxxiii, 394), after a somewhat comprehensive study of the problems involved in the sale of patent medicines by retail druggists, a special committee presented a report including the following expression of opinion:

> "All medicines, and articles used as such, concern the health of those who use them and put dependence on them. By action or failure of action, a medicine is liable to prove hurtful when misapplied. Therefore, it is the right of a purchaser of medicine to receive information of its constituents, their names and proportional quantities. And it is a legitimate act of the state—so far as it deems expedient—to see to it that such information, in printed form, is placed on each package of articles of medicines, as a condition of their legal sale.
>
> "Moreover, legislation requiring the composition of medicines to be given to the consumer is entirely in accord with the spirit of the institutions of the United States, because it is legislation tending to make the individual responsible for taking care of himself and tending to secure him in the means of self-preservation. The purchaser of a medicine is provided with a record of its constituents, given in terms defined by published standards: now he may guide himself, in his own discretion, or with professional aid, by the information given in the record of constituents, or he may neglect to so guide himself, and depend on advice given on the wrapper of the medicine, in the exercise of his personal responsibility. The state has done its duty, and given the individual the opportunity for the exercise of discretion. The opportunity has an educational value to the individual."

Thirty years later, at the meeting of the American Pharmaceutical Association in Nashville in 1913, that association appointed a committee to inquire into and report on the problems involved in the patent-medicine business. The "Commission on Proprietary Remedies," as it is called, is to consider the following general propositions:

> "1. To inquire into and report to the Council, from time to time, on the general subject of proprietary medicines, in their relation to pharmacy, medicine and the public health.
>
> "2. To inquire whether any of the proprietary medicines, commonly known as patent medicines, contain alcohol or narcotic drugs in sufficient amount to render them liable to create a drug habit, or to satisfy such habits where otherwise created.
>
> "3. To inquire whether, or to what extent, the commonly advertised patent medicines contain potent drugs in sufficient amount to render them dangerous in the hands of the laity.
>
> "4. To inquire into the extent to which patent medicines are fraudulently advertised, or differ in properties or origin from the claims made for them, and the extent to which they are advertised for the cure of diseases generally recognized by the medical science as at present being incurable" (*Jour. Am. Pharm. Assn.*, 1913, ii, 1195).

If, as is to be expected, the present committee pursues its investigation along the lines mapped out by the earlier leaders in American pharmacy, and if it will fearlessly report its findings, the American public and the American medical profession will have secured an efficient ally in the present-day fight to eliminate quackery and fraud in the treatment of diseases.

In the summary of the recent accomplishments attempting to solve the patent-medicine problem, Wilbert expresses the opinion that "the questions involved are not to be considered as being answered until they are answered correctly, and that from the point of view of the public the influence of patent medicines on the health and welfare of the individual is the only factor deserving of consideration. Bearing this latter fact in mind, it would appear desirable that all branches of the drug trade give the patent-medicine problem renewed and serious consideration and make an honest effort to adjust their interests in accord with the interests of the public, and thus effectually counteract the frequently made assertions that the economic questions involved must outweigh all others so far as the drug trade may be concerned."

Drunkenness in Massachusetts

The legislature of Massachusetts in 1913 provided, by resolution, for a commission of five persons to investigate drunkenness in that state. The report of the commission is printed in a pamphlet as House Document 2053. It gives the number of arrests for drunkenness in the state during the previous year, the result of hospital treatment in the state institutions for treating inebriates, and discusses the means and measures for the curtailing of the liquor-habit and the prevention of drunkenness. The commission believes that the state of Massachusetts is not yet ready for state prohibition, but that local option is a good measure. As substitutes for saloons it is thought that meeting-places for men should be provided and that possibly for this purpose greater use could be made of the public-school buildings. Recommendations are made for additional legislation to regulate and control the liquor traffic and, as far as possible, prevent drunkenness, which seems to be on the increase in the state. The report is the logical result of a practical, sensible consideration of the liquor problem.

How to Judge a Doctor

Recently there appeared in the department "How to Keep Well" of the Chicago *Tribune* the following query and a reply, which we believe deserves reprintiing as a guide to the physician himself. The correspondent wrote:

> "Some time ago I saw an article in your columns saying that as long as people would patronize an incompetent physician, simply because of his genial manner, they would have themselves to thank for their misfortunes. As far as I can see, the ordinary layman is in no position to judge a physician, and no one in a position to judge will commit himself further than to say that so-and-so is a recognized specialist in his line. How is the layman to judge a general practitioner?"

And the answer was:

> "By the judgment and sense he shows in the ordinary affairs of life; by his attendance at hospitals, clinics, medical society meetings; by his standing with other physicians; by the books and journals he reads; by his knowledge of medicine, medical judgment and skill. Some of these items are get-at-able in every case, and all of them in some cases. At the present time the opportunities for popular education on medical subjects are so abundant that the ordinary layman should be able to judge fairly well between the physician who knows his business and the bluffing ignoramus."

Medicolegal

Proof Rendering Roentgenogram Admissible in Evidence

(Prescott & Northwestern Railroad Co. vs. Franks (Ark.), 163 S. W. R. 180)

The Supreme Court of Arkansas says that it is now a well-recognized fact that by the aid of proper apparatus a picture of the bones of the human body may be obtained that will more or less define the skeleton and show any injuries that may have resulted to the bones, or any foreign substance that may be lodged in the body. Therefore roentgenograms are admissible in evidence when proper proof of their accuracy and correctness is produced. In this case the plaintiff (Franks) had suffered a dislocation and fracture of his hip. His attending physician admitted that he had never had any experience in taking roentgenograms but testified that he was present when the photograph in question was taken; that a glass plate was placed under the injured member of the plaintiff, and the Roentgen ray placed over him, and by reflection of the light from the roentgenoscope the negative was made; that he saw it before it was delivered to the photographer to be developed; that the roentgenogram exhibited to the jury was the same as the impression on the glass which he saw just after it was taken. The witness, although he was not a graduate of any medical school, was a practicing physician and surgeon, and had been for fifteen years. His testimony, detailed above, showed that he was present when the picture was taken, and was familiar with the anatomy of the human body. Therefore the court thinks there was sufficient proof of the accuracy and correctness of the photograph, and that there was no error in admitting it in evidence.

Liability of Operating Surgeons for Negligence of Others—Admissibility of Evidence

(Hunner vs. Stevenson et al. (Md.), 89 Atl. R. 418)

The Court of Appeals of Maryland reverses, on the defendant's appeal, a judgment for $1,000 rendered against him, granting him a new trial. The court says that, June 20, the defendant performed an operation on a Mrs. Stevenson which consisted in the removal of the lower third of the right kidney and drainage of an abscess around the kidney lying between the kidney and the bowel. About five weeks afterward Mrs. Stevenson returned to her home, and, September 9, a piece of gauze which had been left in her was removed by her family physician. A week after that some rubberized silk was taken out by Mr. Stevenson, her husband. A "cigarette drain" had been used, which was covered with rubberized silk.

The court reached the conclusion that the appellant (defendant) could not be held responsible for the negligence, if any, of the hospital physicians, nurses, or interns in the dressing of the wound after the operation was performed, if he did not know of, or was not privy to, such negligence, and it was not discoverable by him in the exercise of ordinary care. At this day, when it is well known that there are physicians and surgeons of special skill in particular branches of their profession, it could not safely be announced as a general rule of law, applicable to such cases as this, that a surgeon who performs an operation is liable for the negligence of other physicians, nurses, or interns in hospitals in the after-treatment, unless he specially undertakes such employment. A surgeon may be called many miles from his residence to perform an operation, and, if he is to be held responsible for the negligence of others after the operation, it might mean either that one of special skill would refuse to perform such operations at distant points, or that his charges would be such that no one of moderate means could employ him. It might be detrimental to the public if such a surgeon were required to attend to the after-treatment, as it would be impossible for him to do so and perform many operations. It would be unreasonable to expect one performing operations in half a dozen different hospitals to continue to dress the wounds and have personal charge of the after-treatment in all cases until the patient is discharged from the hospital.

As reflecting on the defendant's right to leave the dressing of the wound to nurses and other attendants in the hospital, the question was relevant whether the postoperative dressing of wounds, as he had described in Mrs. Stevenson's case, was difficult. It was also proper to ask a medical witness what the practice was among reasonably diligent, competent, and skilful surgeons practicing in hospitals with reference to the personal care, after-care, and treatment of the wounds of patients on whom they had operated. As the plaintiffs asserted that pulmonary tuberculosis resulted from the gauze and rubberized silk being left in the wound, it was proper to ask another medical witness to state how, in his judgment, the sinus left from this wound became infected with tuberculosis, and what connection, if any, the tuberculous condition of the sinus had with the operation or subsequent treatment of the case by the defendant. It was proper, too, to let the jury know how long it usually takes such a wound as described in the testimony to heal. The fundamental error in this case was as to the responsibility of a surgeon operating under such conditions as the defendant did.

Presence of Tuberculous Person May be Considered in Awarding Custody of Children

(Kirkland vs. Matthews (Tex.), 162 S. W. R. 375)

The Court of Civil Appeals of Texas reverses a judgment awarding the custody and care of certain minor children, whose mother was dead, to their father, rather than to their aunt, in which one of the points raised was that living in the father's family was his second wife's mother, who was afflicted with tuberculosis. The court says that the aunt offered to prove that a member of the father's family was afflicted with tuberculosis, a contagious and dangerous disease, but this proof was rejected on the father's objection. The purpose in offering proof of this fact was to show that the minors, should they be awarded to their father, would come into close association with one suffering from a dangerous and contagious malady, and that this was a circumstance to be considered in determining whether the best interest of the minors would be subserved by placing their custody with their father. The court thinks that the testimony was admissible on the issue suggested, and that the trial court erred in rejecting it. What is for the best interest of the children is the question of prime importance in cases of this kind, and any evidence showing or tending to show that their welfare would not be best subserved by placing them in the custody of a contending party should be admitted and considered.

Unlawful Practice of Medicine

(Allen vs. State (Okla.), 138 Pac. R. 178)

The Court of Criminal Appeals of Oklahoma says that it is a penal offense under the laws of Oklahoma for any person to practice medicine or surgery in Oklahoma without having at the time a valid unrevoked certificate. An information charging a person with the violation of that provision of the code which penalizes persons for prescribing or administering any drug or medicine now or hereafter included in materia medica in the treatment of disease, injury, or deformity of human beings, must be substantiated by proof of the fact that some such drug or medicine was so prescribed or administered. This prosecution was begun prior to the adoption of the revised laws, for a violation of this provision. A careful reading of the record disclosed that the accused had been administering certain medicines, but no witness named any drug or medicine prescribed or administered by him, nor was there any proof in the record disclosing that any drug or medicine was administered which was included in materia medica, as required. Without doubt the jury should have been instructed, as requested, that the state had failed to introduce evidence sufficient to establish the guilt of the defendant as charged in the information, and they should return a verdict of not guilty.

Society Proceedings

COMING MEETINGS

American Medical Association, Atlantic City, June 22-26.

American Academy of Medicine, Atlantic City, June 19-21.
American Gastro-Enterological Association, Atlantic City, June 22-23.
American Proctologic Society, Atlantic City, June 22-23.
Montana State Medical Association, Lewistown, July 8-9.
New Jersey Medical Society, Spring Lake, June 29.

AMERICAN GYNECOLOGICAL SOCIETY

Thirty-Ninth Annual Meeting held at Boston, May 1921, 1914

The President, Dr. J. Whitridge Williams, Baltimore, in the Chair

A list of the newly elected officers was published in The Journal, June 6, p. 1820.

Forward Fixation of Cervix as Predisposing Cause of Some Retrodeviations of Uterus

Dr. Edward Reynolds, Boston: The supports of the uterus are largely muscular, with the exception of the forward attachments of the cervix. The shortness of the latter forms an essential element in the anteflexion of the cervix. Firm, forward fixation of the cervix, while the fundus is comparatively movable, creates a predisposition to retrodeviations. The release of the forward fixation of the cervix as a preliminary to the performance of the standard operations for the retrodeviations adds greatly to their percentage of success.

DISCUSSION

Dr. Herman J. Boldt, New York: Heretofore I have always looked on the shortened, and not infrequently indurated, condition of the sacro-uterine ligaments as being the main factor in causing retroversion of the cervix, and have on a number of occasions cut the shortened ligaments to overcome the backache of which many of these patients complain, several times relieving this symptom. That the holding forward of the fundus is due to the action of the round ligaments is questionable in the greater number of such instances. These ligaments are not taut, except when the bladder and rectum are full. The condition is usually an association of anteflexion of the body of the uterus with a retroversion of the cervix; and unless there be an atrophy of the anterior cervicocorporal junction, the tissue at this junction is unyielding — indurated — and it is impossible to straighten it permanently by manual or mechanical means. Hence the mechanical dysmenorrhea of which many patients frequently complain. The usually present shortened anterior vaginal wall is part of the congenital malformation, and is an additional factor in causing the retroversion of the cervix. I have always regarded the shortened and thickened sacro-uterine ligaments to be a low-grade inflammatory process — a parametritis posterior. Furthermore, when the condition is of long standing and more or less atrophy has taken place in the anterior part of the cervix at the flexion angle, because of long duration and not infrequently increased size of the body of the uterus, the organ cannot straighten itself by any physiologic factor brought to bear on it. We may see the uterus assume a position farther backward in the pelvis, thus constituting a retroposition; and then the intra-abdominal pressure may cause a still more acute flexion angle.

Dr. Henry T. Byford, Chicago: I have in many cases separated the bladder from the uterus through a transverse incision and have drawn the parts together from the side to the median line, with the idea that I was getting support in front of the cervix which would hold it back more.

Dr. I. S. Stone, Washington, D. C.: The Mackenrodt fixation operation for retroversion will answer the same purpose and overcome permanently the retroversion.

Dr. J. Wesley Bovée, Washington D. C.: In certain anomalies of development there is an abnormally high attachment of the uterosacral ligaments to the cervix and an abnormally low attachment of the anterior wall of the vagina. These defects may be remedied by severing the anterior wall from the cervix, attaching it at a higher point and severing the uterosacral ligament from the cervix and attaching it to the lower point, thus giving stronger posterior leverage on the posterior wall of the uterus.

Dr. James R. Goodall, Montreal: The type of acute anteflexion of the uterus and the type of retroflexion are two distinct types which cannot be considered as belonging to one class. For instance, if we take young girls who complain of severe dysmenorrhea, we find associated conditions of the vagina and pelvis. Associated with an acute anteflexion of the uterus there is a short anterior lip of the cervix and a long posterior lip. That type of uterus when removed from the body and held by the cervix cannot be undone. The anterior uterine wall is very fibrous in part and it is a type of uterus which seldom, if ever, becomes retroverted or retroflexed. In the other type of case, in which retroversion and retroflexion take place, there is a lack of tone and a tendency to enteroptosis even before pregnancy has taken place, and with that type of uterus the fundus can be flopped about in very few hours after death.

Dr. Edward Reynolds: There is a distinction between these two classes of retroverted and anteflexed uteri. Retroversion seldom occurs in the class in which the anterior wall at the angle of flexion is hard and firm. When we think that the cervix is the cause of the mechanical dysmenorrhea, release of the anterior fixation and posterior discission will straighten the uterus.

An Internal Alexander Operation

This paper, by Dr. Henry T. Byford, Chicago, will appear in full in The Journal.

Effect of Laparotomy on the Circulation

Dr. W. D. Gatch, Indianapolis: In a series of experiments carried out on dogs, I took simultaneous tracings of the intrathoracic pressure of the intra-abdominal pressure, of the pressure in the inferior vena cava, and of the general blood-pressure. I raised the intra-abdominal pressure by injecting warm salt solution into the peritoneal cavity. The tracings showed that the intra-abdominal pressure and the pressure in the inferior vena cava were always equal and rose and fell together. When the intra-abdominal pressure is elevated until it is higher than the blood-pressure, the circulation through the abdomen is abolished, the abdominal viscera being found bloodless at necropsy. The chief and essential cause which propels the blood through the abdominal organs is the beat of the heart. The well-known fact that pressure on the abdomen increases the output from the inferior vena cava is not evidence against this view, because such increase is not maintained unless the circulation is greatly depressed. The absence of valves in the abdominal veins prevents any variations in intra-abdominal pressure due to movements of the abdominal walls from pumping the blood toward the thorax with any degree of efficiency, because as soon as the pressure is released there is a regurgitation. That the heart alone is capable of keeping up the abdominal circulation is proved by experiments.

The effect of anesthesia so deep as to abolish completely the tone of the abdominal wall is to promote the accumulation of blood in the abdomen and limbs, and not uncommonly causes a failure of the circulation during and after operation. It is fortunate that laparotomy is nearly always performed with the patient either in the horizontal or in the Trendelenburg position, for if it were usually done with the patient deeply anesthetized and in the feet-down posture, many more fatalities would occur. Operations both on animals and on man are much better borne under an anesthesia so light as to preserve the tone of the muscles. This is the reason why there is much less so-called shock under nitrous oxid-oxygen anesthesia than under anesthesia due to more powerful agents.

Treatment of Procidentia of Uterus by Interposition Operation

Dr. Thomas J. Watkins, Chicago: Vesico-uterine transposition should be made before much protrusion through the vaginal orifice results, as the prolapse rapidly increases after this has taken place; the more the prolapse, the greater the dangers of recurrences following the operation. Vesicouterine transposition cures cystocele, the most important pathologic feature. An occasional recurrence of the uterine prolapse will occur, except in cases in which the vaginal canal can be practically obliterated. This recurrence, however, is not serious, as it can be easily remedied. The operative technic should be adapted to each individual case.

End-Results of Interposition of the Uterus

Dr. John Osborn Polak, Brooklyn: Interposition operations should be limited to women at or past the menopause, with a relatively small uterus, and when the procedure is elected in those still menstruating, sterilization by tubal ligation should be done at the time of operation. The cases of prolapse in which sliding takes place in the postpubic cleavage plane are not corrected by this procedure. The morbidity is wholly due to technical defects, namely, improper preparation and imperfect hemostasis, vesical injury, etc. In anteverting the uterus the anterior wall of the uterus should rest on the fascial plate just behind the pubis; the fundus should not be brought under the arch, as excessive anterior displacement not only favors recurrence, but anteflexes the uterus and interferes with drainage. The curettings from uteri about to be transposed should always be examined, as degeneration may occur, and hysterectomy is easy after this operation.

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Regarding Dr. Pollitzer's question with reference to acanthosis, the clinical symptoms presented no pigmentation.

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Dr. Milton B. Hartzell, Philadelphia: From a study of one typical case occurring in a man, aged 43, I am convinced that colloid degeneration of the skin of the type represented by the so-called colloid milium is not a disease of the elastic tissue alone, but affects the collagen and elastin in equal degree. The cells of the epidermis may share in the degeneration, although this is probably infrequent.

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Personal Observations on Two Thousand Cases of Skin-Disease in the Negro

DR. HENRY H. HAZEN, Washington, D. C.: The skin-diseases more prevalent among negroes than white persons are dermatitis papillaris capilliti, keloids, dry seborrhea, syphilis, tinea tonsurans, urticaria and vitilligo. Alopecia areata, cancer, eczema, erythema, furuncles and boils, angiomas and nevi, *Pediculus capitis* and psoriasis are less prevalent among negroes than among white persons.

Diffuse Erythematous Lupus Treated with Tuberculin

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DISCUSSION

DR. W. A. PUSEY, Chicago: The process which caused the patient's death can only be surmised, but it seems to me we can reasonably conclude that the patient was in a condition of excessive hypersensitiveness to tuberculous toxins. She showed an excessive reaction, giving evidence of acute poisoning within twenty-four hours after the injection. That would exclude the reaction from contaminating infection. The point ought to be made that in a given patient, in a condition of hypersensitiveness, an incredibly small amount of anaphylactic substance produces reaction, and that we are open to these anaphylactic reactions in spite of the most excessive precaution and the greatest skill.

DR. D. W. MONTGOMERY, San Francisco: It occurred to me that this patient might have been tuberculous, and that this process was causing the lupus erythematosus. Therefore, the tuberculin might have excited this toxin into greater activity, and thus caused death. That would be one explanation.

DR. S. POLLITZER, New York: I think it would be a misfortune if, on the basis of this experience and a few others reported, we were to give up so valuable a remedy as tuberculin injections. The present tendency in the use of tuberculin is to give much smaller doses than 0.01 mg. as an initial dose, and if 0.001 or 0.0001 mg. is given, accidents will possibly be avoided. So far nothing has happened from the use of 0.0001 mg. of tuberculin. If the patient bears that well, further injections can be given.

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DISCUSSION

Dr. Henry Dwight Chapin, New York: One feature in connection with these cases is the tendency to acute dilatation under great stress. In young athletes permanent damage is sometimes done. The athletics in our schools are under the charge of a director who is frequently not sufficiently informed in regard to the dangers of undue stress, and the advice of the physician is not sought in regard to matters relating to athletics.

Dr. Henry I. Bowditch, Boston: The child with a damaged heart does not have a fair show in life. On close observation it may be seen that family history plays a part in these cases. There are often other cases of endocarditis in the same family, and it is also interesting to note the association with streptococcic infection of the tonsils.

Dr. Fritz B. Talbot, Boston: If we study the family history of these cases it will be found more often that there are or have been other cases in the same family. The history of a case of endocarditis which I have just seen shows that the sister had rheumatism and endocarditis three weeks before. It seems to me that rest in bed for six weeks or two months is rather too short a time for most cases.

Dr. J. P. Crozer Griffith, Philadelphia: It is possible that where there is a certain degree of debility the patient may be kept in bed longer than he should be. These patients may be divided into three classes: (1) A small class where there is absolute failure of compensation; (2) a larger class which responds well to treatment and in which recovery usually follows; (3) a class in which there is a tendency to anemia not yielding readily to treatment. There are heart cases which in spite of arsenic, etc., still remain discouraging.

Dr. A. D. Blackader, Montreal, Canada: In regard to the effect of rheumatic endocarditis on development, it has been pointed out that growth is dependent on wide arteries and low blood-pressure. A slight endocarditis, by lowering the blood-pressure, favors wider arteries and an increase in growth, and these children may be found to be a little taller than others in the same family. Another point is the advantage of giving small doses of potassium iodid in these cases of endocarditis in children. This drug may be given in small doses for three, four or five weeks after the temperature has become normal. Its effects on acidosis are well known and it is believed to have some effect on the viscosity of the blood. The after-treatment of cases in which endocarditis has developed is a matter of judgment. Children with mild lesions confined to the mitral valve, excepting for the more strenuous exercises, should be permitted to develop the heart during the period of general development.

Dr. I. A. Abt, Chicago: Aortic lesions in children are not as rare as has been supposed. I have seen an increasing number of cases. In these children with murmurs, where there is a slight temporary dilatation after exercise, what should one do? It is very difficult to keep a boy in this condition in bed. No absolute rule can be laid down. It is a question of the individual case.

Dr. Rowland G. Freeman, New York: No one has spoken of the value of the Roentgen ray in these cases of endocarditis. When a child shows an improvement in symptoms he should be subjected to roentgenoscopy. In one case coming under my observation the child seemed to be gaining, and showing an improvement, it was allowed to get up. Roentgenoscopy showed the condition to be worse than when the first picture was taken. In the management of these cases one should be controlled more by the Roentgen ray than by the clinical examination.

Dr. D. J. Milton Miller, Atlantic City, N. J.: There are a small number of cases of adventitious murmurs not due to endocarditis, but which are exceedingly difficult to diagnose. These cases are sometimes let go without treatment and sometimes disastrously. In endocarditis in children small doses of morphin are valuable and especially so in cases in which there is nervousness or edema.

Dr. Percival Eaton, Pittsburgh, Pa.: In the anemia which frequently complicates these cases I would suggest the longer administration of iron. I think we sometimes keep these children in bed too long. In many cases the heart can be trained to meet the needs of the child; we seem to forget how much can be done by beginning with a very little exercise and gradually increasing it.

Dr. Frank S. Churchill, Chicago: One can get around the long rest in bed by passive exercises. The question of allowing the child up when the pulse is 100 or less depends on the age of the child and the blood-pressure.

Dr. L. E. La Fetra, New York: The family tendency to endocarditis may be explained by the hereditary tendency of lymphoid tissue to infection. The blood-pressure can be used as a guide along with the pulse-rate to determine when the patient may be allowed out of bed. Often for the first few days after the child is up the heart will be rapid; then it will get its second wind, so to speak, and go along all right.

Dr. Herbert Wilcox, New York: One should get these children with anemia and endocarditis into the country. We have a hospital branch in the country, and last summer sent a number of children out there who were under the observation of one of the members of the hospital staff. They received no treatment except good hygienic care, and most of them were permanently improved by this method. This shows why better results are obtained in the families of the wealthy than in those of the poor.

Dr. Floyd M. Crandall, New York: Many children in poor surroundings get hospitalism if kept in bed too long. It is not well to center the child's mind on his heart, and in order to avoid doing this I often make the excuse that I am examining the child for a cough when I am observing the heart. One cannot tell much about the heart unless the child is asleep. The relation of the family history of rheumatism in these cases is interesting. In a family that came under my observation in which there were seventeen cousins, every one had either chorea, endocarditis or rheumatism.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

May 15, XVI, No. 2, pp. 127-257

1 *Cytologic Characteristics of Erythroblasts in Pig Embryo; Origin of *Non-Nucleated Erythrocytes by Cytoplasmic Constriction.* V. E. Emmel, Washington, D. C.
2 Structural Unit and Growth of Pancreas of Pig. G. W. Corner, Baltimore.
3 Ameboid Movement in Corial Melanophores of Rana. D. Hooker, New Haven, Conn.
4 Weight of Thymus of Albino Rat (Mus Norvegicus Albinus) According to Age. S. Hatai.

1. Erythroblasts in Pig Embryo.—The data derived by Emmel by investigation involving the study of blood-cultures, living and fixed blood-vessels in the pig embryo, together with the observations of other investigations for both red and white blood-cells in various mammals, raises the question whether the origin of non-nucleated erythrocytes by a process of cytoplasmic constriction does not merit more serious consideration. Concerning the prevalent views of nuclear extrusion and intracellular disintegration, Emmel claims that the arguments so far as they are based on the indirect evidence from free erythrocytic nuclei in the circulation, erythrocytic nuclear inclusions in phagocytic cells, and nuclear particles in plastids, do not appear conclusive for either theory, and seem equally well accounted for on the basis of cytoplasmic constriction. Nor is the more direct evidence for nuclear extrusion, at least in the embryo, sufficiently convincing but that the problem appears still to be an open one concerning which the present data for cytoplasmic constriction may be justifiably introduced. The organ of non-nucleated erythrocytes by cytoplasmic constriction, if correct, renders the erythroblasts in this respect comparable with the megakaryocytes, plasma cells and lymphocytes, to which they are apparently closely related genetically, for according to recent investigations these cells normally contribute to the mammalian circulation at least two important non-nucleated morphologic elements other than plastids, by the constriction off parts of their cytoplasm.

Journal of Experimental Medicine, Lancaster, Pa.

June, XIX, No. 6, pp. 523-602

5 *Free Malarial Parasites and Effect of Migration of Parasites of Tertian Malarial Infections. M. R. Lawson, New London.
6 Adrenalin Index of Adrenals in Health and Disease. V. P. W. Sydenstricker, B. J. Delatour and G. H. Whipple, Baltimore.
7 *Ovarian Infection in Domestic Fowl and Direct Transmission of Disease to Offspring. L. F. Rettger, New Haven.
8 Morphologic and Developmental Anomalies of Pathogenic Strain of Trypanosoma Lewisi and Their Relation to Its Virulence. W. H. Brown, New York.
9 Certain Spontaneous Chicken Tumors as Manifestations of Single Disease. I. Spindle-Celled Sarcomata Rifted with Blood-Sinuses. P. Rous, New York.
10 Id. II. Simple Spindle-Celled Sarcomata. L. B. Lange, New York.
11 *Recognition of Cholera Vibrio. C. V. Craster, Rosebank, N. Y.
12 *Cultivation of Human Tissue* in Vitro. J. R. Losee and A. H. Ebeling, New York.

5. Free Malarial Parasites.—The malarial parasite is extracellular throughout its life cycle and migrates from one red corpuscle to another destroying each before it abandons it; in the brief intervals between according to Lawson the parasite is free in the blood-serum; it does not remain free long, but almost immediately attaches itself to another red corpuscle by means of delicate pseudopodia. The compact form of the tertian parasite is the type of free parasite most often observed; in this form the parasite may be seen not only in migration, but after quinin and in the cadaver. Lawson believes the compact form to be the normal resting form of the parasite, all other forms being assumed in order to secure attachment and to obtain food, and cautions against confounding free parasites having protoplasmic pseudopodia ready for attachment with the sexual flagellating parasites, whose flagella are composed of chromatin.

The malarial parasite can live for some time free in the blood-serum, though under normal conditions there is no reason why it should remain free for any length of time, and there are certain periods in the life of the parasite when it must be admitted that it is free from the corpuscle and survives. If the parasite is attached to the external surface of the red corpuscle, it is constantly exposed to the action of the patient's serum. The destruction of more than one red corpuscle by each parasite, Lawson says, would readily account for the severe and early anemia occurring in malarial infections. Long continued treatment with quinin will eventually cause the death of all malarial parasites.

7. Ovarian Infection in Domestic Fowl.—Ovarian infection and germinal transmission of disease have been conclusively demonstrated in Rettger's investigations of bacillary white diarrhea in the common domestic fowl. The disease, which has caused so much loss to the poultry industry in recent years, primarily affects young chicks that are but a few weeks old. Chicks which survive frequently become permanent bacillus carriers, the ovary being the important seat of infection. The eggs from such carriers often harbor the organism of the disease in the yolk. Chicks that develop in infected eggs become in turn infected, and have the disease at the time of hatching. The disease is transmitted to normal chicks through the infected droppings; thus an epidemic is produced, and the cycle of infection is completed. There is no evidence to indicate that germinal transmission through the male takes place. In view of the frequent negative results bearing on this question it seems probable that it does not.

11. Recognition of Cholera Vibrio.—Although it cannot as yet be definitely proven Craster believes we are justified in suspecting cholera-like vibrios which eventually develop agglutination properties are of a true cholera nature. It is probable that the production of agglutination and antibodies in the serum brings about the development by the bacterial cell of defensive antiagglutinins, resulting in the disappearance of agglutinating power. In the case of the water vibrios, changed physical conditions could bring about a similar alteration in biologic properties. It may be said that the absence of agglutination in a vibrio isolated from a suspected source does not define conclusively its non-cholera nature. In all probability among a number of cholera-like vibrios isolated from suspected sources a certain percentage will eventually be found to develop agglutination either during laboratory cultivation or by means of animal passage, and until subjected to a procedure that will induce the return of agglutination no vibrio can be regarded with assurance as of a truly saprophytic variety.

Journal of Infectious Diseases, Chicago

May, XIV, No. 3, pp. 403-528

13 *Production of Precipitins. L. Hektoen, Chicago.
14 *Colon Group of Bacteria. L. A. Rogers, W. M. Clark and B. J. Davis, Washington, D. C.
15 *Diminished Coagulation of Blood in Anaphylactic Shock in Dog. O. H. P. *Pepper and E. B. Krumbhaar, Philadelphia.*
16 New Method of Determining Relative Stability of Sewage Effluent, or *Polluted River Water. A. Lederer, Chicago.*
17 *Therapeutic Use of Certain Azo-Dyes in Experimentally Produced Tuberculosis in Guinea-Pigs. L. M. DeWitt, Chicago.
18 Comparison of Plating and Microscopic Methods in Bacteriologic Examination of Milk. G. W. Goodrick, Laramie, Wyo.

13. Production of Precipitins.—By giving rabbits intraperitoneal injections of increasing quantities of serum or blood on three successive days, Hektoen says, a serviceable precipitating serum may be produced in about fifteen days. The same quantity of antigen injected at one time also appears to give good results. The curve of the precipitin in such cases is like the simple antibody curve following a single injection of other antigens. The injection of whole blood may be more advantageous in producing more precipitins for blood-proteins in general than the injection of serum only. The injection of washed human corpuscles give rise to precipitins for human serum.

14. Colon Group of Bacteria.—A collection of typical gas-forming bacteria occurring in milk was obtained by the authors from widely separated and representative sources. These cultures were examined for morphology, spore formation, Gram-stain, amount of gelatin liquefaction, production of indol, reduction of nitrates and neutral red; and amount of acid produced from dextrose, levulose, galactose, adonite, saccharose, lactose raffinose, starch, inulin, mannite, salicin and dulcite. Particular attention was given to the production of gas in media containing dextrose, and for the isolation of this gas the exact method of Keyes with some modifications was used. The carbon dioxid to hydrogen ratio which occurred with the greatest frequency was approximately 1.1. Plotted on the frequency basis this ratio stands apart from all higher ratios. All cultures giving the 1.1 ratio are distinguished from high ratio cultures by the amount of gas formed under exact conditions. This was uniformly less than the amount produced under identical conditions by the high ratio cultures. The amount of acid produced from the individual test substances could not be used to advantage because this was frequently obscured by a secondary alkaline fermentation in which the acid was partially or entirely neutralized. The low ratio cultures fermented a smaller number of test substances than those giving a high ratio, but this difference was not always in those substances usually considered to be fermented with the greater difficulty. The low ratio cultures are distinguished by a high percentage of cultures giving a positive indol test, reduction of nitrates and fermentation of dulcite and glycerin. Very few cultures ferment adonite and starch, and only about 40 per cent. ferment saccharose and raffinose. The high ratio cultures, on the other hand, give a lower percentage of positive test with indol, a much higher number of positive tests with adonite and starch, nearly all ferment saccharose and raffinose but only a few ferment dulcite and glycerin. The low ratio group may possibly be divided into those which ferment dulcite but fail to ferment adonite and starch, and those which do not ferment dulcite but occasionally ferment adonite and starch. No data are available for a logical subdivision of the high ratio group with the possible exception of the small number liquefying gelatin. The 10 gelatin liquefying cultures agreed very closely in the gas ratio, the fermentation of saccharose and glycerin, and the failure to ferment adonite and dulcite. They differed from other high ratio cultures especially in the gas ratio and the fermentation of glycerin. The collection contained a few cultures which differed radically from the others in giving a prolonged fermentation in milk with the production of enormous quantities of gas, and one type which was distinguished by the fermentation of dextrose with the production of carbon dioxid only.

15. **Diminished Coagulation of Blood in Anaphylactic Shock.**—Of 7 dogs developing marked anaphylactic shock, all showed a delay in, or absence of, coagulation of the blood. In all of these the addition of calcium and thromboplastin solution to the oxalated plasma restored its coagulability much more efficiently than calcium alone, or calcium plus fibrinogen solution. No noteworthy change was observed in the fibrinogen content of the blood in this group. The authors believe that such results point to a decrease of thromboplastin or an excess of antithrombin as the important feature responsible for the loss of power of coagulation in anaphylactic shock. Five dogs with slight or no shock showed no changes in the coagulability of the blood, except that in 4 the freshly prepared oxalated plasma (1.10) clotted spontaneously. In no case was clotting observed in richer proportions of oxalate (1.15). The supposition that this coagulation in the presence of oxalate might be due to an excess of calcium in the blood was shown by the result of quantitative calcium determination to be untenable. The only plausible explanation in the authors' opinion is that suggested by the work of MacRae and Schnack, that is, that some thromboplastic substance, as kephalin, may be present and in the absence of an excess of oxalate is responsible for the clotting of the plasma.

17. **Azo-Dyes in Tuberculosis in Guinea-Pigs.**—DeWitt found that trypan blue and trypan red readily penetrate the tubercle in all stages of its development, thus showing that it is possible to penetrate the avascular tubercle by chemicals introduced either subcutaneously, intravenously or intraperitoneally. Trypan blue and trypan red do not penetrate the tubercle bacillus well, and do not kill it in vitro even after twenty-four hours' exposure to a 1 per cent. solution. In therapeutic doses, frequently repeated for long periods, trypan blue and trypan red seem to have no favorable or curative influence in experimental tuberculosis in guinea-pigs. In a single large, nearly lethal dose at the beginning of the infection, they also have no favorable influence. Silver-trypan blue and iron-trypan blue also penetrate the tubercle, but have no bactericidal and no therapeutic influence. It is doubtful whether the metals are carried in with the dye. Copper-trypan blue is soluble, but does not penetrate either the normal or the tuberculous tissues, and is probably changed to an insoluble form or a suspension colloid and retained at the point of injection. Mercury blue is insoluble, is strongly bactericidal in its action on the tubercle bacillus, but is too toxic for therapeutic use, since the pigs died apparently from chronic mercury poisoning rather than from the tuberculous infection, the tuberculous process being generally very slight. The findings with this salt, however, are suggestive, and further experiments with mercury salts will be made.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

May, V, No. 5, pp. 425-525

19 Action of Muscarin on Electric Response of Heart. G. R. Mines, Cambridge, Mass.
20 *Swelling of Colloids and Hydrogen Ion Concentration. L. J. Henderson, W. W. Palmer and L. H. Newburgh, Boston.
21 *Site of Action of Strychnin. H. McGuigan and F. C. Becht, Chicago.
22 *Action of Certain Drugs on Bronchioles. D. E. Jackson, St. Louis.
23 *Pharmacologic Action of Certain Substances on Bronchioles. D. E. Jackson, St. Louis.

20. **Swelling of Colloids.**—No influence to increase colloidal swelling has ever been observed through the action of hydrogen ions varying within the ranges of acidity known to occur in the body or in the urine. A number of investigations make clear the quantitative relationship between hydrogen ion concentration and the swelling of fibrin and of gelatin plates. Such variations in osmotic pressure as may occur in autolysis and in a variety of other ways greatly influence colloidal swelling and also the swelling of bits of fresh kidney. A tendency to acidity in the organism is not commonly accompanied by edema, but is usually quite independent of any known disturbance of the water equilibrium of the organism. Hence it is utterly fallacious to assume that any significance, as a cause of edema, attaches to the frequent occurrences of a tendency to acidity—one of the commonest of pathologic states—in edema. A tendency to acidity of the urine often occurs apart from nephritis and albuminuria. Hence it is fallacious to argue that any significance, as a cause of nephritis, attaches to the frequent occurrence of this very common pathologic condition in nephritis and albuminuria.

21. **Site of Action of Strychnin.**—Strychnin according to McGuigan and Becht acts on both motor and sensory neurons and no tetanus can develop from its action unless the motor neuron is directly acted on by it.

22. **Action of Drugs on Bronchioles.**—Jackson found that arecolin produces immediate and profound bronchoconstriction. This can be readily overcome by epinephrin, etc. Small doses of atropin or hyoscin (or of the so-called duboisin) completely prevent the constrictor action of arecolin. Arecolin is very much more active than pilocarpin both on the bronchioles and on the heart. The action of arecolin tends to pass off much more quickly than that of pilocarpin. Hordenin is a very active bronchodilator. This action depends on a stimulation of the sympathetic nerve endings. It stimulates the heart and produces a moderate, prolonged rise in blood-pressure. It will produce bronchodilatation after constriction has been established by arecolin, pilocarpin, B-iminazolylethylamin or thebain. The dilatation thus produced is usually of a more prolonged and lasting character than that produced by epinephrin. The

rise in general blood-pressure is, however, only about one-fourth to one-sixth as great as that produced by epinephrin. B-iminazolylethylamin produces marked bronchoconstriction of direct muscular origin and which hordenin, epinephrin, "lodal," etc., may or may not overcome, depending on the extent and duration of the constriction and the quantities of the drugs administered. This practically amounts to a pitting of the direct muscular contracting action of the former drug against the indirect nervous bronchodilating action of any one of the latter drugs. The result in any given case will simply amount to the algebraic sum of these two forces. "Lodal" (6.7 dimethoxy-2 methyl-3.4 dihydroisoquinolinum chlorid) produces a moderate bronchodilatation after constriction produced by arecolin, pilocarpin and sometimes by B-iminazolylethylamin. This dilatation is apparently partly (but probably not wholly) due to the liberation of epinephrin from the adrenal glands which has been shown by others to occur. Hydrastinin has a similar but weaker action. B-tetrahydronaphthylamin produces moderate bronchodilatation after pilocarpin, etc. There is also a marked rise in blood-pressure. Thebain produces profound bronchoconstriction. This is of direct muscular origin. It may be overcome to a considerable extent by hordenin or epinephrin. "Lodal" is much less effective. This intense bronchoconstriction is probably rather closely associated with the strychnin like convulsions observed by Magendie, Bernard and others. The amount of the prescribed therapeutic dose appears to be well within the limits of quantities which may be expected to produce distinct bronchoconstriction in the human subject. Ergotoxin possesses no very marked specific action of its own to the bronchioles, either in the way of dilatation or constriction when injected intravenously into spinal animals. And all other drugs tested out (arecolin, pilocarpin, thebain, epinephrin, "lodal," hordenin) act in a perfectly normal manner on the bronchioles after enormous doses of ergotoxin have been injected intravenously. So far as the action of drugs on the bronchioles is concerned the conclusion is reached by Jackson that bronchoconstrictor nerves always respond true to the vagus type, and bronchodilator nerves always react in a manner exactly analogous to that of the visceral thoracico lumbar sympathetics. But the relative extent of these reactions with various drugs may vary through rather wide limits.

23. **Pharmacologic Action of Certain Substances on Bronchioles.**—A new method for carrying on artificial respiration by means of a specially devised piece of apparatus is described by Jackson. This piece of apparatus fits inside the thorax and the lungs are inflated by exhausting the air from the cavity of the chest whose walls are held rigidly in place by the apparatus. Experiments were performed mostly on dogs and cats. It has been impossible to confirm (in these animals) the observations of others that epinephrin produces a preliminary specific bronchoconstriction. Arecolin produces extreme bronchoconstriction. Its action may be overcome by epinephrin, "epinine," etc., or prevented by atropin or hyoscin. The action of arecolin differs in several particulars from that of pilocarpin. Hordenin is a very effective bronchodilator. It possesses this action after constriction has been produced by pilocarpin, arecolin, and sometimes after B-iminazolylethylamin and thebain. It raises the general blood-pressure much less than epinephrin. B-iminazolylethylamin produces marked bronchoconstriction of direct muscular origin which, under certain conditions, may be completely overcome (dilatation) by hordenin or epinephrin. Under certain other conditions these drugs fail to cause dilatation after B-iminazolylethylamin. "Lodal" (6.7 dimethoxy-3 methyl 3.4 dihydroisoquinolinum chlorid) produces moderate bronchodilatation. Hydrastenin has a similar but weaker action. This is probably partly due to liberation of epinephrin. B-tetrahydronaphthylamin produces moderate bronchodilatation (active). Thebain produces profound bronchoconstriction of direct muscular origin. Hordenin, "epinine," epinephrin, etc., are able to overcome this, under certain conditions, to a moderate degree. This bronchoconstriction probably is rather closely associated with the strychnin like convulsions ordinarily produced by thebain. The prescribed therapeutic dose of thebain would appear to be within the limits of quantities which might be expected to cause a fair degree of bronchoconstrictor. Ergotoxin has a mild specific bronchoconstrictor action which is probably of direct muscular origin. After enormous doses of ergotoxin perfectly normal reactions were obtained by the use of all other drugs tested out (i. e., arecolin, thebain, pilocarpin, epinephrin, tyramin, "lodal," hordenin).

Medical Record, New York

May 30, LXXXV, No. 22, pp. 967-1012

24 Clinical Study of Traumatic Nerve Paralysis. A. S. Leverty, New York.
25 Management of Laryngeal Tuberculosis in Sanatoria and Private Practice. W. Freudenthal, New York.
26 Observations, Based on Forty-Five Years of Electrotherapeutic Work. A. D. Rockwell, New York.
27 Cesarean Section. S. J. Druskin, New York.
28 Tobacco Amblyopia. G. W. Vandegrift, New York.
29 Provocative Wassermann Reaction. M. C. Pease, Jr., New York.
30 Prevention of Psychic Trauma. H. S. Munro, Omaha.
31 Divulsion of Arm and Scapula. G. K. Dickinson, Jersey City, N. J.

New York Medical Journal

May 30, XCIX, No. 22, pp. 1061-1112

32 Habitual Constipation and Its Treatment. M. Einhorn, New York.
33 Present Status of Abderhalden's Reaction. M. G. Wohl, Philadelphia.
34 *Lobar Pneumonia. E. E. Cornwall, New York.
35 Recognition of Mental Deficiency. L. E. Bisch, New York.
36 Treatment of Insane in Tropics. F. Woodbury, Philadelphia.
37 Jung's Libido Theory and Bergsonian Philosophy. B. M. Hinkle, New York.
38 Legal Status of Trained Nurses in Administration of Anesthetics. A. C. Vandiver, New York.
39 Hydrorrhea Nasalis J. Guttman, New York.
40 Medical Colors. (Scarlet and Gold.) S. P. Gerhard, Philadelphia.
41 Capital Punishment in Electric Chair. S. R. Klein, New York.

34. **Lobar Pneumonia.**—The fifty-four cases of lobar pneumonia cited by Cornwall were treated by a special method. A point in the hygiene which is considered of importance is to temper the cold fresh air to the afebrile patient. During the febrile period of a well marked lobar pneumonia, Cornwall says, the fresh air should be cold, but in the aged and in cases with little or no fever, and always after defervescence, the patient should be kept warm and should be protected from drafts. Careless exposure of the patient when he has no fever may be responsible for complications.

A particular and essential feature of this treatment is the regulation of the diet along the following lines: The quantities of protein and fuel given are less than the minimum health rations; the diet as a whole is non-putrefactive; and it includes a sufficient quantity of the food salts needed by the body, especially the calcium salts, of which a deficiency regularly exists in pneumonia. The purpose of this diet is to supply nourishment sufficient to carry the patient through the short period of this disease with a minimum of trouble from the alimentary tract, that region of special danger in pneumonia, whence may come general poisoning, vasomotor paralysis, nervous disturbances of the heart through reflexes and mechanic disturbances from distension.

Another essential and characteristic feature of this treatment is extreme caution and reserve in the use of cathartics. Castor oil or some other vegetable cathartic is preferred. The popular calomel and Epsom salts are looked on with disfavor by Cornwall, and he believes that the administration of that combination at the beginning of a pneumonia or any time in its course may add materially to the gravity of the prognosis. In this treatment, after an initial gentle purge, simple or soap suds enemas are given every second day if the patient is in good condition, until the expected time of the crisis, which is taken to be the fifth day of the disease; after that time, or at any time if there are signs of heart-strain, the bowels are not disturbed.

The treatment of symptoms according to this method is distinguished by conservatism. If there is severe pain in the early period of the disease, preventing necessary sleep, morphin or codein is given in moderate doses; but later in the disease, and especially near the time of the crisis, and mation, Gram-stain, amount of gelatin liquefaction, production of indol, reduction of nitrates and neutral red; and amount of acid produced from dextrose, levulose, galactose, adonite, saccharose, lactose raffinose, starch, inulin, mannite, salicin and dulcite. Particular attention was given to the production of gas in media containing dextrose, and for the isolation of this gas the exact method of Keyes with some modifications was used. The carbon dioxid to hydrogen ratio which occurred with the greatest frequency was approximately 1.1. Plotted on the frequency basis this ratio stands apart from all higher ratios. All cultures giving the 1.1 ratio are distinguished from high ratio cultures by the amount of gas formed under exact conditions. This was uniformly less than the amount produced under identical conditions by the high ratio cultures. The amount of acid produced from the individual test substances could not be used to advantage because this was frequently obscured by a secondary alkaline fermentation in which the acid was partially or entirely neutralized. The low ratio cultures fermented a smaller number of test substances than those giving a high ratio, but this difference was not always in those substances usually considered to be fermented with the greater difficulty. The low ratio cultures are distinguished by a high percentage of cultures giving a positive indol test, reduction of nitrates and fermentation of dulcite and glycerin. Very few cultures ferment adonite and starch, and only about 40 per cent. ferment saccharose and raffinose. The high ratio cultures, on the other hand, give a lower percentage of positive test with indol, a much higher number of positive tests with adonite and starch, nearly all ferment saccharose and raffinose but only a few ferment dulcite and glycerin. The low ratio group may possibly be divided into those which ferment dulcite but fail to ferment adonite and starch, and those which do not ferment dulcite but occasionally ferment adonite and starch. No data are available for a logical subdivision of the high ratio group with the possible exception of the small number liquefying gelatin. The 10 gelatin liquefying cultures agreed very closely in the gas ratio, the fermentation of saccharose and glycerin, and the failure to ferment adonite and dulcite. They differed from other high ratio cultures especially in the gas ratio and the fermentation of glycerin. The collection contained a few cultures which differed radically from the others in giving a prolonged fermentation in milk with the production of enormous quantities of gas, and one type which was distinguished by the fermentation of dextrose with the production of carbon dioxid only.

15. **Diminished Coagulation of Blood in Anaphylactic Shock.**—Of 7 dogs developing marked anaphylactic shock, all showed a delay in, or absence of, coagulation of the blood. In all of these the addition of calcium and thromboplastin solution to the oxalated plasma restored its coagulability much more efficiently than calcium alone, or calcium plus fibrinogen solution. No noteworthy change was observed in the fibrinogen content of the blood in this group. The authors believe that such results point to a decrease of thromboplastin or an excess of antithrombin as the important feature responsible for the loss of power of coagulation in anaphylactic shock. Five dogs with slight or no shock showed no changes in the coagulability of the blood, except that in 4 the freshly prepared oxalated plasma (1.10) clotted spontaneously. In no case was clotting observed in richer proportions of oxalate (1.15). The supposition that this coagulation in the presence of oxalate might be due to an excess of calcium in the blood was shown by the result of quantitative calcium determination to be untenable. The only plausible explanation in the authors' opinion is that suggested by the work of MacRae and Schnack, that is, that some thromboplastic substance, as kephalin, may be present and in the absence of an excess of oxalate is responsible for the clotting of the plasma.

17. **Azo-Dyes in Tuberculosis in Guinea-Pigs.**—DeWitt found that trypan blue and trypan red readily penetrate the tubercle in all stages of its development, thus showing that it is possible to penetrate the avascular tubercle by chemicals introduced either subcutaneously, intravenously or intraperitoneally. Trypan blue and trypan red do not penetrate the tubercle bacillus well, and do not kill it in vitro even after twenty-four hours' exposure to a 1 per cent. solution. In therapeutic doses, frequently repeated for long periods, trypan blue and trypan red seem to have no favorable or curative influence in experimental tuberculosis in guinea-pigs. In a single large, nearly lethal dose at the beginning of the infection, they also have no favorable influence. Silver-trypan blue and iron-trypan blue also penetrate the tubercle, but have no bactericidal and no therapeutic influence. It is doubtful whether the metals are carried in with the dye. Copper-trypan blue is soluble, but does not penetrate either the normal or the tuberculous tissues, and is probably changed to an insoluble form or a suspension colloid and retained at the point of injection. Mercury blue is insoluble, is strongly bactericidal in its action on the tubercle bacillus, but is too toxic for therapeutic use, since the pigs died apparently from chronic mercury poisoning rather than from the tuberculous infection, the tuberculous process being generally very slight. The findings with this salt, however, are suggestive, and further experiments with mercury salts will be made.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

May, V, No. 5, pp. 425-525

19 Action of Muscarin on Electric Response of Heart. G. R. Mines, Cambridge, Mass.
20 *Swelling of Colloids and Hydrogen Ion Concentration. L. J. Henderson, W. W. Palmer and L. H. Newburgh, Boston.
21 *Site of Action of Strychnin. H. McGuigan and F. C. Becht, Chicago.
22 *Action of Certain Drugs on Bronchioles. D. E. Jackson, St. Louis.
23 *Pharmacologic Action of Certain Substances on Bronchioles. D. E. Jackson, St. Louis.

20. **Swelling of Colloids.**—No influence to increase colloidal swelling has ever been observed through the action of hydrogen ions varying within the ranges of acidity known to occur in the body or in the urine. A number of investigations make clear the quantitative relationship between hydrogen ion concentration and the swelling of fibrin and of gelatin plates. Such variations in osmotic pressure as may occur in autolysis and in a variety of other ways greatly influence colloidal swelling and also the swelling of bits of fresh kidney. A tendency to acidity in the organism is not commonly accompanied by edema, but is usually quite independent of any known disturbance of the water equilibrium of the organism. Hence it is utterly fallacious to assume that any significance, as a cause of edema, attaches to the frequent occurrences of a tendency to acidity—one of the commonest of pathologic states—in edema. A tendency to acidity of the urine often occurs apart from nephritis and albuminuria. Hence it is fallacious to argue that any significance, as a cause of nephritis, attaches to the frequent occurrence of this very common pathologic condition in nephritis and albuminuria.

21. **Site of Action of Strychnin.**—Strychnin according to McGuigan and Becht acts on both motor and sensory neurons and no tetanus can develop from its action unless the motor neuron is directly acted on by it.

22. **Action of Drugs on Bronchioles.**—Jackson found that arecolin produces immediate and profound bronchoconstriction. This can be readily overcome by epinephrin, etc. Small doses of atropin or hyoscin (or of the so-called duboisin) completely prevent the constrictor action of arecolin. Arecolin is very much more active than pilocarpin both on the bronchioles and on the heart. The action of arecolin tends to pass off much more quickly than that of pilocarpin. Hordenin is a very active bronchodilator. This action depends on a stimulation of the sympathetic nerve endings. It stimulates the heart and produces a moderate, prolonged rise in blood-pressure. It will produce bronchodilatation after constriction has been established by arecolin, pilocarpin, B-iminazolylethylamin or thebain. The dilatation thus produced is usually of a more prolonged and lasting character than that produced by epinephrin. The

rise in general blood-pressure is, however, only about one-fourth to one-sixth as great as that produced by epinephrin. B-iminazolylethylamin produces marked bronchoconstriction of direct muscular origin and which hordenin, epinephrin, "lodal," etc., may or may not overcome, depending on the extent and duration of the constriction and the quantities of the drugs administered. This practically amounts to a pitting of the direct muscular contracting action of the former drug against the indirect nervous bronchodilating action of any one of the latter drugs. The result in any given case will simply amount to the algebraic sum of these two forces. "Lodal" (6.7 dimethoxy-2 methyl-3.4 dihydroisoquinolinum chlorid) produces a moderate bronchodilatation after constriction produced by arecolin, pilocarpin and sometimes by B-iminazolylethylamin. This dilatation is apparently partly (but probably not wholly) due to the liberation of epinephrin from the adrenal glands which has been shown by others to occur. Hydrastinin has a similar but weaker action. B-tetrahydronaphthylamin produces moderate bronchodilatation after pilocarpin, etc. There is also a marked rise in blood-pressure. Thebain produces profound bronchoconstriction. This is of direct muscular origin. It may be overcome to a considerable extent by hordenin or epinephrin. "Lodal" is much less effective. This intense bronchoconstriction is probably rather closely associated with the strychnin like convulsions observed by Magendie, Bernard and others. The amount of the prescribed therapeutic dose appears to be well within the limits of quantities which may be expected to produce distinct bronchoconstriction in the human subject. Ergotoxin possesses no very marked specific action of its own to the bronchioles, either in the way of dilatation or constriction when injected intravenously into spinal animals. And all other drugs tested out (arecolin, pilocarpin, thebain, epinephrin, "lodal," hordenin) act in a perfectly normal manner on the bronchioles after enormous doses of ergotoxin have been injected intravenously. So far as the action of drugs on the bronchioles is concerned the conclusion is reached by Jackson that bronchoconstrictor nerves always respond true to the vagus type, and bronchodilator nerves always react in a manner exactly analogous to that of the visceral thoracico lumbar sympathetics. But the relative extent of these reactions with various drugs may vary through rather wide limits.

23. **Pharmacologic Action of Certain Substances on Bronchioles.**—A new method for carrying on artificial respiration by means of a specially devised piece of apparatus is described by Jackson. This piece of apparatus fits inside the thorax and the lungs are inflated by exhausting the air from the cavity of the chest whose walls are held rigidly in place by the apparatus. Experiments were performed mostly on dogs and cats. It has been impossible to confirm (in these animals) the observations of others that epinephrin produces a preliminary specific bronchoconstriction. Arecolin produces extreme bronchoconstriction. Its action may be overcome by epinephrin, "epinine," etc., or prevented by atropin or hyoscin. The action of arecolin differs in several particulars from that of pilocarpin. Hordenin is a very effective bronchodilator. It possesses this action after constriction has been produced by pilocarpin, arecolin, and sometimes after B-iminazolylethylamin and thebain. It raises the general blood-pressure much less than epinephrin. B-iminazolylethylamin produces marked bronchoconstriction of direct muscular origin which, under certain conditions, may be completely overcome (dilatation) by hordenin or epinephrin. Under certain other conditions these drugs fail to cause dilatation after B-iminazolylethylamin. "Lodal" (6.7 dimethoxy-3 methyl 3.4 dihydroisoquinolinum chlorid) produces moderate bronchodilatation. Hydrastenin has a similar but weaker action. This is probably partly due to liberation of epinephrin. B-tetrahydronaphthylamin produces moderate bronchodilatation (active). Thebain produces profound bronchoconstriction of direct muscular origin. Hordenin, "epinine," epinephrin, etc., are able to overcome this, under certain conditions, to a moderate degree. This bronchoconstriction probably is rather closely associated with the strychnin like convulsions ordinarily produced by thebain. The prescribed therapeutic dose of thebain would appear to be within the limits of quantities which might be expected to cause a fair degree of bronchoconstrictor. Ergotoxin has a mild specific bronchoconstrictor action which is probably of direct muscular origin. After enormous doses of ergotoxin perfectly normal reactions were obtained by the use of all other drugs tested out (i. e., arecolin, thebain, pilocarpin, epinephrin, tyramin, "lodal," hordenin).

Medical Record, New York

May 30, LXXXV, No. 22, pp. 967-1012

24 Clinical Study of Traumatic Nerve Paralysis. A. S. Leverty, New York.
25 Management of Laryngeal Tuberculosis in Sanatoria and Private Practice. W. Freudenthal, New York.
26 Observations, Based on Forty-Five Years of Electrotherapeutic Work. A. D. Rockwell, New York.
27 Cesarean Section. S. J. Druskin, New York.
28 Tobacco Amblyopia. G. W. Vandegrift, New York.
29 Provocative Wassermann Reaction. M. C. Pease, Jr., New York.
30 Prevention of Psychic Trauma. H. S. Munro, Omaha.
31 Divulsion of Arm and Scapula. G. K. Dickinson, Jersey City, N. J.

New York Medical Journal

May 30, XCIX, No. 22, pp. 1061-1112

32 Habitual Constipation and Its Treatment. M. Einhorn, New York.
33 Present Status of Abderhalden's Reaction. M. G. Wohl, Philadelphia.
34 *Lobar Pneumonia. E. E. Cornwall, New York.
35 Recognition of Mental Deficiency. L. E. Bisch, New York.
36 Treatment of Insane in Tropics. F. Woodbury, Philadelphia.
37 Jung's Libido Theory and Bergsonian Philosophy. B. M. Hinkle, New York.
38 Legal Status of Trained Nurses in Administration of Anesthetics. A. C. Vandiver, New York.
39 Hydrorrhea Nasalis J. Guttman, New York.
40 Medical Colors. (Scarlet and Gold) S. P. Gerhard, Philadelphia.
41 Capital Punishment in Electric Chair. S. R. Klein, New York.

34. **Lobar Pneumonia.**—The fifty-four cases of lobar pneumonia cited by Cornwall were treated by a special method. A point in the hygiene which is considered of importance is to temper the cold fresh air to the afebrile patient. During the febrile period of a well marked lobar pneumonia, Cornwall says, the fresh air should be cold, but in the aged and in cases with little or no fever, and always after defervescence, the patient should be kept warm and should be protected from drafts. Careless exposure of the patient when he has no fever may be responsible for complications.

A particular and essential feature of this treatment is the regulation of the diet along the following lines: The quantities of protein and fuel given are less than the minimum health rations; the diet as a whole is non-putrefactive; and it includes a sufficient quantity of the food salts needed by the body, especially the calcium salts, of which a deficiency regularly exists in pneumonia. The purpose of this diet is to supply nourishment sufficient to carry the patient through the short period of this disease with a minimum of trouble from the alimentary tract, that region of special danger in pneumonia, whence may come general poisoning, vasomotor paralysis, nervous disturbances of the heart through reflexes and mechanic disturbances from distension.

Another essential and characteristic feature of this treatment is extreme caution and reserve in the use of cathartics. Castor oil or some other vegetable cathartic is preferred. The popular calomel and Epsom salts are looked on with disfavor by Cornwall, and he believes that the administration of that combination at the beginning of a pneumonia or any time in its course may add materially to the gravity of the prognosis. In this treatment, after an initial gentle purge, simple or soap suds enemas are given every second day if the patient is in good condition, until the expected time of the crisis, which is taken to be the fifth day of the disease; after that time, or at any time if there are signs of heart-strain, the bowels are not disturbed.

The treatment of symptoms according to this method is distinguished by conservatism. If there is severe pain in the early period of the disease, preventing necessary sleep, morphin or codein is given in moderate doses; but later in the disease, and especially near the time of the crisis, and at any time if there is much respiratory embarrassment, opiates are strictly avoided. Hot poultices are sometimes applied for severe thoracic pain. For relief of restlessness, sodium bromid is the preferred drug. If delirium incites the patient to get out of bed, physical restraint is strictly enforced. If there is gastric irritability or diarrhea or tympanites, reduction of the diet is the only treatment given. The diet may be reduced to peptonized milk and barley water alone, or barley water alone, or water alone, with the food salts. If stimulation of the heart is needed, it is given according to the following plan. In the aged, in alcoholics, and in patients with preexisting myocardial disease, it is given from the beginning. In young adults with originally healthy hearts it is usually delayed until signs of heart-strain appear, which is generally not later than the fourth day. The first stimulant given is strychnin sulphate, in doses of one-sixtieth grain three to six times a day. If more stimulation is needed, tincture of strophanthus is given in doses of one and a half minim every four hours. The strychnin sulphate is increased on occasion to one-thirtieth grain every four hours, which is the maximum amount of that drug permitted in this disease, and the strophanthus to two or three minims every four hours. In a large majority of cases, Cornwall states, more than this stimulation is not called for, but if it should be required, caffein citrate in doses of 1 to 3 grains every four hours is added. In cases with extremely low blood-pressure, epinephrin is given, hypodermically or by mouth. If there is an obstinately dilated right ventricle, digitalin is given hypodermically, in addition to the other heart stimulants. For extreme dilatation of the right ventricle threatening disaster, Cornwall believes venesection to be indicated. Whiskey, in small doses, is given to alcoholic patients and to the aged if they bear it well.

New York State Journal of Medicine

May, XIV, No. 5 pp. 229-287

42 *Kinetic System. G. W. Crile, Cleveland.
43 Quarantine Requirements Presented to Legislature. J. J. O'Connell, New York.

42. Abstracted in The Journal, May 23, p. 1685.

Pennsylvania Medical Journal, Athens

May, XVII, No. 8, pp. 605-686

44 Philadelphia Laymen and Physicians Unite to Reform Medical Charities Abuse. J. D. Farrar, Philadelphia.
45 Dispensary Abuse. H. M. Fussell, Philadelphia.
46 *Present Conception of Arthritis Deformans. D. Silver, Pittsburgh.
47 Omental Adhesions. G. P. Muller, Philadelphia.
48 *Clinical Significance of Low Blood-Pressure. G. M. Piersol, Philadelphia.
49 Acute Edematous Laryngitis. J. F. Culp, Harrisburg.
50 Prosecution and Conviction of Malingerer on Strength of an Ophthalmoscopic Examination. J. E. Willetts, Pittsburgh.
51 Intra- and Extranasal Indications for Submucous Resection of Septum. J. H. McCready, Pittsburgh.
52 Some Ocular Disturbances of Nasal and Accessory Sinus Origin. N. S. Weinberger, Sayre.
53 Preservation of Physiologic Functions in Treatment of Gynecologic Diseases. H. D. Beyea, Philadelphia.

46. Abstracted in The Journal, Oct. 18, 1913, p. 1485.

48. **Significance of Low Blood-Pressure.**—When low blood-pressure is due to the acute infectious diseases, Piersol says, measures should be instituted to promote adequate elimination of the toxins of the disease and to stimulate the flagging heart or failing vasomotor mechanism, as the case may be. When in course of chronic visceral disease low blood-pressure indicates the onset of cardiac weakness, rest, proper food and stimulation of the weakening cardiac muscle must be resorted to. If the hypotension is but the manifestation of some cachectic state, the cause of the cachexia must be removed if possible. When it results from hemorrhage or dehydration of the system due to persistent vomiting and purging, not only should measures be instituted to relieve the underlying cause, but the depleted volume of circulation should be restored and maintained by the use of normal salt solution intravenously, subcutaneously or by the bowel. In the type of case referred to last, in which the low blood-pressure has no definite discoverable cause other than poor hygiene and malnutrition, Piersol has found that much can be done by forced feeding, proper rest, fresh air, cool bathing, properly graduated exercises, and the use of such drugs as iron and strychnin to overcome the anemia and restore the general muscular tone of the individual.

Wisconsin Medical Journal, Milwaukee

May, XII, No. 12, pp. 379-410

54 *Gas Oxygen Novocain Anesthesia. W. E. Bannen, La Crosse.
55 Nitrous Oxid Anesthesia. H. M. Decker, Davenport, Ia.
56 Congenital Stenosis of Pylorus. W. C. F. Witte and P. H. Jobse, Milwaukee.
57 Anaphylaxis in Cancer. F. G. Connell, Oshkosh.
58 Early Diagnosis of Syphilis. O. H. Foerster, Milwaukee.
59 Cancer and Cancer Problem. W. E. Ground, Superior.

54. Abstracted in The Journal, Nov. 1, 1913, p. 1656.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

May 23, I, No. 2786, pp. 1105-1164

1 Objections to Incomplete Operation for Cancer of Breast. C. B. Lockwood.
2 *Report of Work Carried out at Radium Institute, London, 1913. A. E. H. Pinch.
3 Chemico-Physical Laboratory on Radium. W. L. S. Alton.
4 *Case of Multilocular Cystic Disease (Cystadenoma) of Pancreas. E. C. Hadley.
5 Acute Obstruction of Small Intestine. C. A. Pannett.
6 Pituitrin in Postoperative Intestinal Stasis. N. Porritt.
7 Ileocolic Intussusception in Child of Four Months: Resection: Lateral Anastomosis. W. S. Fenwick.
8 Treatment of Imperfectly Descended Testicles. E. M. Corner.
9 *Experimental Proof of Value of Mask over Surgeon's Mouth During Operations. A. L. Candler.

2. Abstracted in The Journal, Sept. 13, 1913, p. 893.

4. **Multilocular Cystic Disease of Pancreas.**—In 1901 Hadley's patient was operated on for an abdominal tumor. On opening the abdomen, a large cyst first came into view. One and a half pints of dark reddish-brown fluid were withdrawn. The tumor was found to be composed of a multitude of smaller cysts congregated to form a large lobulated tumor extending to the right. It shelled out quite easily until the duodenum was reached. The pancreas was therefore ligated at its neck; the head, although very cystic, was left behind for various reasons. The tumor removed consisted of the whole of the body and tail of the pancreas, and measured 10 inches by 7 inches. It consisted in the main of a large number of cysts varying in size, separated from one another by septa of fibrous tissue and a varying amount of apparently normal pancreatic tissue. The cysts were larger at the tail end than at the head end of the organ. The large cyst, which gave rise to most of the physical signs, was at the extreme tail end. It occupied the whole thickness of the tumor in this situation. The fluid from this large cyst contained altered blood and a large quantity of albumin. It had no amylolytic or proteolytic properties. It was alkaline in reaction. The fluid contained in the smaller cysts was colorless and watery.

From January, 1901, until June 6, 1910, this patient was able to work continuously as overlooker in a large steel pen factory. During that time she had needed practically no medical attendance. In July, 1910, when she again came under Hadley's care, she was almost completely confined to bed. She complained chiefly of gradual loss of power in her hand and arms, with numbness and tingling of the fingers. The muscles of the body generally, and especially of the hands and arms, were much wasted. She had a large tumor in the abdomen situated immediately above and extending to the right of the umbilicus. The tumor was recognized as the head and a portion of the neck of the pancreas in a state of cystic degeneration. It formed a prominent mass and displaced the intestines downward and into the left iliac region of the abdomen. The tumor according to the patient had been getting gradually larger for the last two or three years, but much more rapidly during the last two or three months.

It was painless, well defined and slightly movable. A large cyst could be recognized to the left of the tumor, and numerous small tense cysts studded all over the rest of it.

The skin of the chest, abdomen and thighs was curiously pigmented in irregular patches of a dark brown color, producing a piebald appearance. Except that every two or three weeks she had what she called "bilious attacks," the digestive functions were good. These attacks were "bouts" of uncontrollable vomiting; they were unaccompanied by pain or jaundice, and tended to recur more frequently toward the last. The urine, frequently tested, invariably contained a faint haze of albumin, a few granular and hyaline casts, but never any blood or sugar. The Cammidge reaction was positive throughout this part of illness. The course of her illness was, at first, one of rapidly advancing peripheral neuritis, with rapid wasting of the muscles, most marked in the upper extremities. One month later she had very little sensation in her arms or legs. The deep and superficial reflexes were abolished. Soon after this, rigidity followed by contractures commenced in her hands. The fingers became flexed at the interphalangeal joints, and over-extended at the metacarpophalangeal joints. The wrist joints also became overextended.

Toward the end of November, 1910, her condition resembled an advanced case of progressive muscular atrophy with contractures. In the beginning of 1911 the muscular wasting had become extreme. Both legs were immovably contracted, and both hands clawed (*main en griffe*). There was still a little voluntary movement possible in the arms, but complete loss of coordination. She had been quite unable to feed herself or move herself in bed for some time. There was never any jaundice. Sahli's sign was present. The bowels only moved with aperients, and later, all drugs were vomited, only after enemata. During the last two months of life mucous casts were passed in the stools, which were otherwise normal. Liquid food appeared to be well digested; at all events, no undigested fat or other material were seen in the dejecta. During the last few weeks of her illness there was incontinence of urine and feces. At the time of her death, March 30, 1911, no musculature could be felt; she had literally wasted to a skeleton. There was only partial relaxation of the contractures at death. Her mental condition remained clear until the end. The pancreas was removed en masse with the duodenum and gall-bladder attached. The specimen measured 8 inches in length by 6 inches in breadth at its widest part. The greatest circumference of the head was 11 inches. The stump of the neck—all, in fact, to the left of the groove containing the superior mesenteric artery and vein—was converted into a large unilocular cyst.

9. **Value of Mask over Surgeon's Mouth.**—In order to demonstrate the value of a mask over the surgeon's mouth during operations Candler carried out the following experiments with *Bacillus prodigiosus:* With ordinary breathing and quiet speaking no bacilli left the mouth. Coughing for two minutes caused only a few bacilli to be emitted, and these were controlled by a mask of eight layers of gauze, one of four layers being insufficient. Sneezing was shown to be a most dangerous source of infection from the mouth, one sneeze, and that an artificial one, producing 130 colonies of microorganisms in a circle of 3½ inches diameter at a distance of 18 inches. A mask of eight layers is not sufficient to keep back all organisms during prolonged sneezing, although it reduces the infection considerably. There was, however, no growth on a plate exposed to one sneeze through such a mask.

Clinical Journal, London

May 13, XLIII, No. 19, pp. 289-304

10 *Classification of Arthritis. D. W. C. Jones.
11 Acute Generalized Infective Paralysis in Adults. W. B. Warrington.
12 New Growths of Testicle. H. W. Wilson.
13 Clinical Study of Acapnia. J. F. Lessel.

May 20, No. 20, pp. 305-320

14 *Causes and Treatment of High Blood-Pressure. F. de H. Hall.
15 Danger-Signals in Suppuration of Middle Ear. H. A. Kisch.
16 Malingering. J. Collie.

10. **Classification of Arthritis.**—The following list of the common manifestations of pathology and their application to joints is quoted by Carmalt-Jones: 1. Senility—osteoarthritis, in part, overworked, malnutrition—contributory to osteoarthritis. 2. Metabolic toxemia—gout. 3. Infective toxemia—acute rheumatism, rheumatoid arthritis. 4. Focal infection—gonococcal, pneumococcal typhoid, purulent arthritis. 5. Granulomatous infection—tubercular syphilitic arthritis. 6. Neoplasms—rare. 7. Trauma—traumatic synovitis. Arthritis in hemorrhagic diseases.

14. **Causes and Treatment of High Blood-Pressure.**—The longer Hall watches cases of arteriosclerosis the less value does he place on drugs in the treatment of this condition. A serviceable group of drugs is that which has an aperient effect. Among these he would give the first place to calomel and blue pill. These preparations are not only useful as aperients, but they also have a very remarkable effect in lowering blood-pressure. A teaspoonful of Epsom or Glauber's salts may be taken in half a tumblerful of warm water before breakfast, or one of the mineral waters be substituted. Next to the aperients Hall places the iodids. He usually employs the potassium salts, but some patients tolerate the sodium salt better. In patients with a syphilitic history the Wassermann reaction should be tried, and, if positive, mercury should be administered, preferably by inunction. Hall would not advise salvarsan in these cirumstances. After a mercurial course potassium iodid may be given in full doses.

At the menopause or in the obese, small doses of thyroid extract, together with a combination of bromid and iodid of potassium, will be found most useful in diminishing weight, lowering tension, and relieving the patient of the flushes and feeling of fulness in the head. If the iodids are badly borne, potassium or sodium nitrite in 1 to 2 grain doses may be tried, but doses up to 5 grains have been warmly advocated. In solution they are unstable, so they are best ordered in chocolate tablets.

In a few cases Hall has found much benefit from the administration of hippurates of ammonia and lithia. The latter is the one he usually employs; 3 or 4 grains may be given daily. The ammonia salt is less powerful; 6 to 7 grains may be given daily. The more powerful and more quickly acting vasodilators, such as amyl nitrite, nitroglycerin and erythrol tetranitrate, Hall reserves for emergencies, chiefly for anginal or dyspneal attacks coming on in patients with high blood-pressure. For the very acute attacks the inhalation of 3 minims of nitrite of amyl on a pocket-handkerchief will often give immediate relief, and its action may be continued by giving 1/100 grain of nitroglycerin. This dose may be increased up to 1/10 grain, i. e., ten times the initial dose. He has found erythrol tetranitrate in doses of ¼ grain most useful in patients who get anginal symptoms on starting to walk. The drug should be given a quarter of an hour previously.

Blood-letting is a remedy which Hall has found of the greatest possible service in certain cases of high blood-pressure. Venesection is indicated where the patient is unconscious and cerebral hemorrhage is feared; also in convulsive cases attended with high tension. In these cases the timely abstraction of from 10 to 20 ounces of blood, according to the severity of the attack and the sex of the patient, will often be attended with a most satisfactory result. Hall emphasizes the value of the sphygmomanometer in cases of coma, as an indication for the employment of venesection; as by this means one is able to distinguish between coma due to hemorrhage and that caused by thrombosis, as in the latter condition blood-pressure is invariably low.

Lancet, London

May 23, I, No. 4734, pp. 1441-1514

17 *Work at Radium Institute for 1913. A. E. H. Pinch.
18 *Diagnosis of Pulmonary Tuberculosis. A. C. Inman.
19 So-Called Reeducation of Deaf. R. Lake.
20 Knowledge of Experimental Nephritis. H. Oertel.
21 Syphilis of Central Nervous System, Salvarsan. J. E. R. McDonagh.
22 *New Combined Method of Prostatectomy. J. L. Thomas.
23 *Case of Congenital Defect of Ulna. P. B. Roth.*

24 Secondary or Symptomatic Leukemia. G. R. Ward.
25 Bacillus Coli as Cause of Septic Onychia. Report of Three Cases. T. Houston and W. W. D. Thomson.
26 *Case of Tetanus Treated with Subcutaneous Injections of Phenol; Recovery. W. G. Reynolds.

17. Abstracted in The Journal, Sept. 13, 1913, p. 893.

18. **Diagnosis of Pulmonary Tuberculosis.**—Inman is convinced from experimentation that the antihemolytic power of tuberculous serum can be made manifest in a hemolytic experiment by introducing Besredka's antigen into the mixture. He says that repeated positive reactions, especially with a 32-fold serum dilution, in the absence of a positive Wassermann reaction, indicate the presence of an active tuberculous lesion. Repeated negative reactions indicate the absence of an active tuberculous lesion, if cases of under twelve months' duration be excepted.

22. **New Combined Method of Prostatectomy.**—An incision is made into the bladder under spinal analgesia, and as soon as the bladder is emptied of fetid urine, Thomas pours about an ounce of pure tincture of iodin into it, then drains perineally after injecting tincture of iodin through the meatus along the urethra into the prostatic bed. The patient is lying on his back as in the ordinary suprapubic operation during the whole of its performance, the perineal opening being made on the point of the forceps passed transvesically from above, while the legs are simply spread apart in order to see and to cut on the projecting end of the forceps under the skin. The enucleation is done by the forefinger in the bladder, but frequently Thomas passes the other forefinger into the perineal opening to assist the enucleation from below as in the ordinary perineal prostatectomy. The pouring of pure tincture of iodin into the bladder before the enucleation is started he claims is of great importance, because as soon as fresh raw surface is made in the process of enucleation the tincture follows into every hole and corner. The injection of the tincture along the urethra also ensures a cleaner urethra and further floods the freshly made "prostatic bed."

26. **Tetanus Treated with Injections of Phenol.**—In the case cited by Reynolds the wound and the scar were excised and pure phenol was applied. At the same time the subcutaneous injection of phenol was started, 1 ounce of a 1 per cent. solution being given in the right axilla. Under chloroform anesthesia the injections were repeated, the strength of the solution being raised to 3 per cent. The groins and axilla were treated alternately. Chloroform was administered at each injection owing to the spasms produced by the stimulation of the needle-prick. A careful watch was kept for phenol poisoning, but at no time did the patient show any symptoms. The urine retained its normal color throughout.

On the following morning the spasms became very violent, and the child suffered great pain. Potassium bromid gr. xx and chloral hydrate gr. xx were administered four hourly, and the patient became more quiet. On the sixth day cutaneous erythema and slight edema were noticed at the sites of injections, and these were discontinued. The spasms were increasing in violence and frequency, and the phenol solution was again administered on the seventh day. The injections were discontinued on the eighth and ninth days, but were recommenced at 2 a. m. on the tenth. On the thirteenth day the opisthotonos became very marked, and it increased during the following six days. By the twentieth day it had became excessive, although the spasms decreased both in violence and in frequency.

On the same day the opisthotonos suddenly began to diminish, and had entirely disappeared by the twenty-third day. The rigidity, especially that of the abdomen, did not relax for some time; in fact, this did not disappear for about seven weeks. The patient was able to open the mouth slightly about the sixteenth day, and by the eighteenth was eating bread and butter. Improvement continued uneventfully during the next four weeks, and he was discharged cured on the fifty-sixth day. He was seen three weeks later on return from a convalescent home, and was in perfect health. No antitetanic serum was administered.

Annales de Médecine et Chirurgie Infantiles, Paris

May 15, XVIII, No. 10, pp. 321-356

27 Never Fail to Examine the Throat. (Regarder la gorge.) E. Périer.
28 Dietary Deficiency Disturbances. (Troubles provoqués par une alimentation exclusive.) E. Weill and G. Mouriquand.
29 *Wassermann Positive in Infant, Negative in Mother. M. Cassoute.
30 Gangrene of the Foot in Diphtheria. V. Veau and Weber.

29. **Conflicting Wassermann in Mother and Child.**—The reaction was negative in the mother but positive in the nursling. The child showed no signs of syphilis but did not seem to thrive until after it had been given a course of specific treatment. A number of similar cases from the literature are compared with this to emphasize the importance of the Wassermann test for young children, even those apparently normal. It may reveal those liable to develop serious nervous or other trouble late in life which there was nothing to suggest in childhood, the mother and other children apparently free from any taint of syphilis. Cassoute has encountered three cases in which dementia praecox developed about 20, like a bolt from a clear sky, as there had been nothing in the history of the family to suggest syphilis. If proper treatment had been started in childhood—on the basis of a positive Wassermann—irreparable injury of the nervous system might have been warded off.

Bulletin de l'Académie de Médecine, Paris

May 5, LXXVIII, No. 18, pp. 637-647

31 Nevus Cancers in Man and Horse Are Infra-Epitheliomas. Borrel.
32 Cure of Fracture of Clavicle in Ten Days by Letting Arm Hang over Side of Bed; At First without Support. Couteaud.

May 12, No. 19, pp. 649-664

33 *Grafting Operation to Prepare Orbit for Artificial Eye. (Greffes épidermiques orbitaires devant permettre dans les cas de symblépharons le port d'un œil artificiel.) Magitot.
34 Black Secretion from Sebaceous Glands of the Breast. (Mélanidrose mammaire.) V. H. Torkomian.

33. **Grafting Procedure to Prepare Orbit for Artificial Eye.**—Magitot refers to cases in which the resection has had to be so extensive that there is no pocket left to hold the artificial eye and no material to which a graft can be sutured to make a pocket. He has been quite successful in such cases with a convex, hollow, silver support, flat at the back, with a hole at the rear into which fits a spring. This almond-shaped support is covered with a Thiersch flap at least 5x6 cm. in size. The edges of the flap are tucked into the opening at the back and are held there by the spring. This skin-coated prothesis is then slipped into the orbit, where it forms an adequate support for the artificial eye.

Bulletins de la Société de Pédiatrie, Paris

April, XVI, No. 4, pp. 197-240

35 *Modification of Diet Saves Ducklings from Epidemic Disease. P. Merklen.
36 Translucence of Skull in Diagnosis of Hydrocephalus, etc. C. Chatelin.
37 Defective Nourishment and Dilatation of the Stomach; Progress on Sweetened Milk; Two Cases. G. Variot and Grandjean.
38 Separation of the Epiphysis in an Infant and Young Child. (Décollement épiphysaire avant l'apparition du noyau osseux dans l'extrémité cartilagineuse.) Lance.
39 New Spiroscope. Lance.
40 Leg Grows Abnormally Long after Tuberculous Knee Process; Two Cases. Savariaud and Roederer.

35. **Modification of Diet Saves Ducks from Epidemic Disease.**—Merklen refers to the disease called *la crampe* which affects ducklings three or four weeks old. Their legs drag and finally they become paralyzed and die of starvation unless they are brought up by hand. A number of cases having occurred on a farm near Paris, he had the feed changed to a greater variety, and no further cases developed. A return to the former monotonous diet was speedily followed by development of new cases, and the epidemic subsided again when the mixed feed was resumed.

Presse Médicale, Paris

May 16, XXII, No. 39, pp. 369-380

41 *Poisoning from Food. (Les infections alimentaires par le groupe du bacille de Gaertner.) A. Zuber.
42 Botulismus. (Le botulisme hier et aujourd'hui.) C. Esmein.

41. **Poisoning from Food Contaminated with Bacteria of Gaertner Group.**—Zuber compares a number of cases of wholesale poisoning from food, including the Cholet poisoning from a *crème royale*, discussed editorially in The Journal, March 21, 1914, p. 939. The symptoms were similar in every respect to those with meat poisoning from the same group of paratyphoid bacilli, but the mortality was even higher; 10 deaths in 38 cases. Sacquépée found a mortality of only 41 in 2,723 cases on record, that is, 1.5 per cent. The interval was unusually short, only two hours; from twelve to thirty-six hours is the more usual interval. Treatment can be only symptomatic, inducing vomiting, rinsing out stomach and bowels, keeping up diuresis by hot baths, hot compresses to the abdomen and saline infusion. In the extremely toxic, cholera-like cases, stimulants for the heart and application of heat are indispensable. The fact that the toxin is apparently not modified by heat renders the paratyphoid bacillus particularly dangerous.

Revue de Chirurgie, Paris

May, XXXIV, No. 5, pp. 553-720

43 *Aneurysms and Injury of Nerves on the Battle-Field. O. Laurent.
44 *Sporotrichosis of the Breast. E. Quénu.
45 *Cecopexy. (Fixation du caecum au tendon du petit psoas.) P. Duval.
46 *Treatment of Injury of the Knee. (Plaies du genou et leur traitement.) L. Hayem.
47 *The Liver with Appendicitis. (Le foie dans l'appendicite.) J. W. Sallis. Commenced in No. 4.

43. **Battle-Field Aneurysms and Injury of Nerves.**—Laurent remarks that aneurysms used to be rarely encountered by the army surgeons but now they are frequent. The smaller size of the bullet facilitates spontaneous arrest of the hemorrhage, but the aneurysm which forms is liable to be mistaken for an abscess, especially as the pressure is so painful that the man clamors for operative relief. The danger of secondary hemorrhage, infection and gangrene is imminent, and the first dressing should be reenforced with elastic bands and splints as if the limb was fractured. Then expectant treatment should be the rule for five or six weeks, as the hematoma might possibly be absorbed, if the pain is not so violent as to demand intervention. Measures to promote collateral circulation, compression under water, baths, etc., may aid the process. It is rarely possible to suture the vessel. A ligature may be necessary before transportation but it favors infection and gangrene; an emergency ligature is indicated rather more for a diffuse aneurysm. He applies an elastic ligature at first, but it cannot be trusted for long. It is applied above and exactly at the limit of the injury to the artery. The pocket is opened and the clots removed with gauze and the hand. The peripheral stump may bleed and this is ligated also, but within the limits of the injury. Then the soft parts are sutured in tiers. Seventeen cases are reported in detail from the Balkan campaigns, with recovery of all but 3. The most distressing are the aneurysms in the neck; in one such case two unsuccessful attempts were made to ligate the injured common carotid before he succeeded and then another hemorrhage proved fatal.

Laurent operated in 18 of the 61 cases of injury of nerves of which he kept records, and he thinks operative treatment should be the rule for injury of a nerve in a limb, supplementing it with massage, hydrotherapy and injections of strychnin in 3 or 5 mg. doses. The results are better when the operation is postponed until all chance of infection is probably past. He describes 41 cases, with the details of his operative treatment when such was applied. The left radial nerve was the one most often injured, and his experience indicates that spontaneous restoration of a nerve is a most exceptional occurrence.

44. **Sporotrichosis of the Breast.**—Quénu adds another to the four cases on record in which women had a sporothrix tumor in the breast, not tender and not adherent to the skin or deeper tissues, resembling more a cyst than a malignant tumor in some of the cases. In others the tumor was as large as a hen's egg and adherent to the skin, hard except at one point, where there was fluctuation, the nipple retracted, the whole resembling a scirrhus. In cases of this type there were generally other lumps elsewhere which aided in the differentiation. In one case on record there was a concomitant cancer in the breast. All the patients were over fifty-seven; there was one man in the group. The subsidence of the tumors under potassium iodid confirms the diagnosis. In Quénu's case the lesion was curetted but was long in healing until iodid was given, when the breast healed rapidly as also an ulceration on the thigh and the lump in the arm promptly disappeared, but the abscess in the back still persists and he intends to hasten its healing by opening it.

45. **Cecopexy.**—Duval gives five plates to show the preferable technic for fastening the cecum to the psoas parvus.

46. **Gunshot, Stab or Crushing Injury of the Knee.**—Hayem analyzes 11 cases with thirteen operations, remarking that the old saying "the less one does, the better one does," cannot be accepted nowadays. For such injuries as these he advocates intervention and the sooner the better, and the prompt and complete recovery in the 2 cases in which he operated the fourth and sixth hours after a bullet or large stab wound severing the tendon of the quadriceps, confirms the advantages of this. The patients were dismissed completely restored the twenty-fifth and twenty-sixth day. Five patients did not regard their injury as serious and did not apply for treatment until several days or two weeks after the injury; 2 were left with a stiff knee and 3 died from the septicemia already installed or suppuration dragging through months. In 4 other cases the operation came the second day; the joint was already infected or the wound extensive and soiled at the time. Partial or total ankylosis could not be warded off, and the patients were in the hospital from 54 to 146 days.

47. **The Liver with Appendicitis.**—Sallis discusses twenty-five cases, pointing out the variety of disturbances liable in the kidney from the toxic and infectious features of appendicitis. There does not seem to be any effectual means of treating appendicular liver trouble. Prophylaxis is the only weapon at our command, removing the appendix before serious damage results.

Revue Mens. de Gyn., d'Obstêt. et de Pédiatrie, Paris

April, XIX, No. 4, pp. 233-300

48 *Treatment of Hemorrhage with Placenta Praevia. A. Brindeau.
49 Weakness of Cicatrix after Extraperitoneal Cesarean Section. S. Delle Chiaje.

38. **Placenta Praevia.**—Brindeau clings still to the obstetrical treatment of hemorrhage from placenta praevia, relying on the rupture of the membranes, the inflatable bag, bipolar version, manual or instrumental dilatation, etc. Surgical treatment is only exceptionally required. The child is generally born prematurely when there is placenta praevia and the mortality is high, 25 to 70 per cent. even in recent statistics. Rupture of the membrane suffices to arrest the hemorrhage in about 50 per cent. of the cases, but this may lead to complications if labor does not follow. The metreurynter is not always easy to introduce with placenta praevia, and it might push up the placenta and separate it completely. Instrumental or bimanual dilatation still has a mortality of 7 or 8 per cent. All of these measures thus have their drawbacks for the mother and all are distinctly unfavorable for the child. If the hemorrhage still continues, the uterine artery can be clamped through the posterior roof of the vagina, or the aorta can be compressed by the hand or rubber-tube wound around the waist. Still another aid is to slip a chair under the mattress so as to raise the woman's pelvis until the venous pressure is less than the intra-uterine pressure, when the hemorrhage stops of itself.

Berliner klinische Wochenschrift

May 18, LI, No. 20, pp. 917-964

50 *Behring's Method of Vaccinating against Diphtheria. (Ueber das Diphtherieschutzmittel "Ta.") E. v. Behring and R. Hagemann.
51 Some Fundamental Principles of Chemotherapy. H. Ritz.
52 *Effect of Compressed Air. (Physiologie und Pathologie des Lebens in verdichteter Luft.) A. Bornstein.

53 *Obesity from Abnormally High Sugar Content of the Blood. (Hyperglykämische Obesitas.) N. Roth.
54 Multiple Diverticula of Large Intestine. H. Kohn.
55 Punctate Application of Thermocautery over Entire Erysipelas Area Aborts Attack. (Abortive Erysipelbehandlung.) J. Kumaris.

50. **Behring's Diphtheria Preventive.**—Behring's mixture of toxin and antitoxin, or "TA" as he calls it, is here officially described and the field for its application outlined. A colored plate shows the local reaction to the vaccination with it. The main points of this communication were summarized in the Berlin Letter, June 14, 1913, p. 1896, and May 30, 1914, p. 1738.

52. **Physiology and Pathology of Working in Compressed Air.**—Bornstein states that among the 694 men with caisson sickness whom he has attended, 90 per cent. had it in the form of "bends," that is, intense pains in the limbs, with marbling. The affection generally is transient, but he has known men incapacitated by the resulting chronic changes in the bones and joints. He remarks that in very few other affections have we so clear an understanding of the nature of the trouble as in compressed-air disturbances. They are the result of the absorption of nitrogen by the tissues, especially by fat and lipoid tissues—which include the nervous system—and then the formation of gas-bubbles as the pressure is released and the gas escapes from the tissues. The symptoms from the gas infiltration of the tissues predominate with caisson sickness and those from gas-bubble production in the disturbances in workers in diving bells. The corpulent are more liable to suffer than the lean, and the persons and organs with sluggish circulation suffer most.

In treatment, means to promote the circulation are an important factor, and Bornstein says that physical exercise is the safest and most effectual means to accomplish this. Men who have never experienced any disturbances at their work in compressed air are liable to begin to suffer if anything happens to hamper their circulation, either general or local. A heart or kidney affection or even an acute bronchitis has been known to bring on fatal caisson sickness in men who had been working for months in compressed air without suspicion of injury. Some of the men seemed to become habituated; fully 75 per cent. escaped recurrence among those who kept on working after their first attack of "bends." Gradual changing from the compressed to ordinary atmospheric pressure gives the gas a chance to escape into the lungs and be expelled without production of gas-bubbles. Oxygen helps; he has established by experiments on animals, on himself and on large numbers of workmen that pure oxygen under a pressure of three atmospheres can be borne for thirty minutes, and help in the expulsion of the nitrogen, as this gas diffuses most readily into a gas which contains little or no nitrogen. Stage decompression is aided by return to the compressed air at need, and "bends" is treated with massage and warm baths, supplementary to the inhalation of oxygen.

53. **Hyperglycemia with Obesity.**—Roth found the sugar content of the blood decidedly above normal in 4 of 16 obese patients examined. Alimentary glycosuria followed ingestion of 100 gm. of dextrose in only 3 of the 4 cases, but determination of the sugar content of the blood revealed the latent diabetes in all the cases. Restriction of the intake of carbohydrates was soon followed by marked improvement. Bang's method for determining abnormal proportions of sugar in the blood proved simple and reliable, and Bornstein commends it highly. Three drops of blood are soaked up into a piece of blotting paper, 16 by 28 mm. When dry, 5 c.c. of a boiling solution of potassium chlorid is poured over it (136 c.c. of a concentrated solution of potassium chlorid; 64 c.c. distilled water and 0.15 c.c. of 25 per cent. hydrochloric acid). This coagulates the albumin in the blood while the sugar diffuses in the fluid and the Fehling reaction is applied after half an hour. If this does not precipitate out any suboxids, then the sugar content of the blood is normal (below 0.15 per cent.). A precipitate means hyperglycemia. With four drops of blood a reaction is obtained with a sugar content of only 0.12 per cent. which is the lowest limit of the normal range. When hyperglycemia is thus ascertained, an antidiabetic diet will not only tend to ward off further trouble from the underlying diabetes, but it will tend to cure the obesity. Hyperglycemia is liable to predispose to arteriosclerosis, contracted kidney, cerebral hemorrhage, cataract, eczema, furunculosis and gangrene, so there is every reason to get on its track early and put an end to it by appropriate dieting.

Centralblatt f. d. Grenzgebiete d. Med. u. Chir., Jena

XVIII, No. 3, pp. 205-318. Last indexed April 4, p. 1126

56 *Roentgen Treatment of Goiter. (Behandlung der Strumen und des Morbus Basedowii mit Röntgenstrahlen.) M. Lüdin.
57 *Biologic Diagnosis of Surgical Tuberculosis. G. Wolfsohn.
58 *Pulsating Pleurisy. (Pulsierende Pleuraergüsse.) E. Levi.

56. **Roentgen Treatment for Goiter.**—Lüdin lists and compares 208 articles on this subject, with special reference to exophthalmic goiter. The general verdict with simple goiter seems to be that a cautious trial of the Roentgen rays seems justified in cases of growing parenchymatous struma in the young. Under other conditions it is indicated only when operative treatment is contra-indicated or refused. Roentgen treatment has more of a field with exophthalmic goiter, and experience is accumulating that it has a favorable action on the Basedow goiter in numerous cases, F. A. Stoney regards it as the treatment of the future; only one of her 41 cases failed to show benefit and 14 were entirely cured. A number have reported benefit from this after failure of all other measures. The nervous disturbances and the impairment of the general health are what respond most favorably to Roentgen treatment. Stegmann's patient gained 3.3 kg. in three sittings and 20 kg. (44 pounds) by the seventh sitting, and four others have mentioned gains of from 4.8 to 22.7 kg. in two to four months. Next in order the tachycardia is influenced but more slowly, and the pulse may grow slower in time. Forty-two report that in time the protruding eyes receded entirely in 6; almost completely in 2; very slight protrusion was left in 9; in 14 there was very little change and none at all in 11. Subsidence of every symptom is rare; only eight writers have reported cases under this heading, but gratifying improvement has been reported by a number in proportions ranging from 33 to 100 per cent. Incomplete abortive forms and cases of acute iodin intoxication seem to have benefited from Roentgen treatment in the hands of some, but Lepine's patient did not seem to be affected.

Holzknecht asserts that the length of time required for treatment reflects the duration of the affection before treatment was begun. One patient with exophthalmic goiter for three months, was cured by a three-months' course of treatment; with three others the figures were respectively twenty-four, three and seven months, cured by twenty-two and six-months' courses of treatment. Two others whose Basedow dated from seven and four years were not cured even under eighteen and seven months of treatment. A few instances have been published of return of symptoms after radiotherapy; more numerous are the reports of durable cures, for one to four years. Ledoux urges exposing the thymus as well as the thyroid, and Kuchendorf includes the heart. Among those who denounce Roentgen treatment are Gebele, v. Eiselsberg, Hochenegg, Hahn and Schloffer. Their main objection is that in case an operation has to be done on the goiter later, the changes in the capsule from the radiotherapy interfere with the operation. But Lüdin remarks that time has shown that this interference is not of much moment. A more serious objection is the liability to transformation of the clinical picture into myxedema under too long Roentgen treatment; Wagner, Howell, Holland, Bergonié and Speder have each reported a case displaying this tendency. Zimmern, Raymond and Gilmer witnessed aggravation of the Basedow in 4 cases. Lüdin says in conclusion that the voices raised against Roentgen treatment are less numerous than those advocating it, but all agree that extreme caution is necessary.

57. **Biologic Diagnosis of Surgical Tuberculosis.**—Wolfsohn's article is based on 264 articles in recent literature discussing serologic findings, the tuberculin reactions and inoculation of animals as aids in differential diagnosis of surgical tuberculous affections. As there is comparatively

little toxic destruction of albumin with localized tuberculous processes, there is little or no instigation to production of antibodies, and hence such processes scarcely ever respond to ordinary serodiagnostic measures. More instructive are tests for opsonins, test transmission of anaphylaxis, and the meiostagmin reaction. These three technics are comparatively reliable but require such skill that they are beyond the reach of most.

The reaction at the focus after subcutaneous injection of tuberculin is extremely instructive, but a number of instances are on record in which this reaction seemed to have contributed to the spread of the disease. Pankow was led to assume bilateral disease from the pain coming on in each kidney after the test subcutaneous injection. The course of the case later proved that one was sound at the time. Krönig has never witnessed a focal reaction with less than 1 mg. of "old" tuberculin, and more than this dose he regards as dangerous. Hohlweg had hematuria in one case; Kremser has reported the flaring up of a latent process in one case—the apparently sound testicle suppurating; Schröder, suppuration around the rectum and epididymitis; Wegner, inflammation of the ribs, while Stricker has compiled a number of instances of prolonged reactions in children with aggravation of the disease or flaring up of old latent foci, generally in lymph-nodes, and acute exacerbations which proved fatal.

It is impossible to foretell any special general or local excessive susceptibility, so that Sahli and some others denounce the subcutaneous tuberculin test altogether. In Diem's two cases the joints swelled and endocarditis developed in one, and he thinks there can be no doubt of the tuberculous nature of this "articular rheumatism" which developed immediately after injecting 0.5 or 1 mg. of tuberculin.

The Pirquet skin tuberculin reaction is more constant and more intense with surgical than with pulmonary tuberculosis, unless the bone process is in the fungous, walled-in stage. This applies also to lupus; a positive reaction can generally be obtained only by applying the tuberculin directly to an opening made in the lupus patch; then an intense focal reaction becomes evident. According to the evidence to date a positive skin tuberculin reaction in children under 2 is a sign of active tuberculosis in every case. With children up to 10 or 12 it suggests a probable surgical tuberculous affection. A negative reaction, especially when repeated, renders the latter improbable.

58. **Pulsating Pleurisy.**—Levi gives brief summaries of 118 cases of pulsating pleurisy which he has found on record. The left side was the seat of the pulsating effusion in 93.6 per cent. of 110 cases, and 77.4 per cent. of 84 cases were in men. In the 45 cases in which the cause was known tuberculosis was incriminated in 55.5 per cent., pneumonia in 15.5, and in one case each, cancer, puerperal pyemia, influenza, polyarthritis and aneurysm, in 3 cases each, trauma and scarlet fever, and twice pneumococcus empyema. The outcome is known in 74 cases: 43.2 per cent. terminated in recovery; 10.8 were improved, 1.4 showed no change and 44.6 per cent. of patients died. The figures make a better showing in the 24 operative cases: recovery in 66.6; improved 12.6, and died 20.8 per cent. No attempt at operation was made in 44 purulent cases and 25 per cent. recovered and 61.3 per cent. died. If the effusion is not purulent medical measures should be given a thorough trial. If they fail the effusion should be aspirated by simple tapping. With a purulent effusion, no time should be lost before resecting ribs for thorough drainage of the pleural cavity. Any delay is dangerous not only on account of progressive debility but to ward off pericarditis.

Deutsche medizinische Wochenschrift, Berlin

May 14, XL, No. 20, pp. 993-1040

59 Operative Treatment of General Sepsis Originating in the Ear. (Die chirurgischen Eingriffe bei otogenen septischen Allgemeininfektionen.) W. Kummel.
60 Influence of Santonin and Digitalis on Perception of Colors. H. Schulz.
61 *Salvarsan in Treatment of Progressive Paralysis. W. Runge.
62 Loss of Pupil Reflexes after Trauma. (Doppelseitige reflektorische Pupillenstarre nach Schadeltrauma.) R. Finkelnburg.
63 Treatment of Motor Disturbances of the Stomach. (Motilitätsstörungen des Magens.) H. Winternitz.
64 *Spastic Ileus. A. Fromme.
65 *Secondary Anesthesia Fatalities. (Der sekundare Narkosentod.) G. Keil.
66 Cure of Advanced Urogenital Tuberculosis by Operative Means. R. Gutzeit.
67 To Avoid Anaphylaxis on Reinjection of Antitoxin. F. Cuno.
68 Friedmann's Remedy for Tuberculosis; Reply to Kraus in No. 19. L. Brauer.

61. **Salvarsan in Progressive Paralysis.**—Runge states that remissions worthy of the name occurred only in 3.9 per cent. of 380 cases in which no treatment had been taken; in 9.3 per cent. of 140 treated with iodid alone; in 11.4 per cent. of 35 with mercury alone; in 14 per cent. of 44 treated with a total dosage of 1 gm. salvarsan, and in 60 per cent. of 47 treated with a larger dosage of salvarsan, ranging from 1 to 10.5 gm. These figures speak in favor of salvarsan treatment, especially as the proportion of remissions increased with the dosage, from 28 per cent. among 72 given less than 3 gm. to 74 per cent. in the 19 given over 3 gm. The general health improved remarkably as a rule, even when the mind showed no special improvement. Full earning capacity to date was restored in 11 per cent. including some whose mind had shown impairment for several months. In general, however, results were better the shorter the interval since the first mental symptoms.

The best technic seems to be by repeated courses, bringing the total dosage up to 5 or 10 gm. At the same time Runge warns that entirely refractory cases are sometimes encountered. His experience has shown further that large doses may in some cases fail to induce a remission and the disease may grow more severe and terminate fatally. He gave the salvarsan at five-day intervals but some recent experiences warn that an eight-day interval would be safer. It is often impossible at present to differentiate with certainty between cerebral syphilis and paresis, which renders it all the more necessary, he declares, to treat the patient vigorously with salvarsan at the first onset of symptoms, testing the tolerance cautiously. The paralysis did not seem to be modified by the salvarsan in 42 per cent. of the cases, and in 4 cases the course of the disease seemed to be accelerated although the dosage had been only 0.2 to 1.5 gm. Possibly, better results might have been attained finally if the medication had been pushed farther.

64. **Acute Ileus from Spasm.**—Fromme reports two cases of ileus in which the laparotomy disclosed a spastic constriction as the cause of the trouble. He knows of only twenty such cases on record, exclusive of lead-poisoning cases. The first patient was a boy of nearly 12; the severe pain came on suddenly during a running race. The small intestine was found contracted over quite a stretch, and pale; the entire small intestine was rather small. During the operation the contraction subsided and there were no further disturbances or pain. The second patient was a woman of 55, and in this case also the laparotomy, done on assumption of mechanical ileus, put an end to the spasmodic contraction and all trouble ceased. The woman's small intestine was contracted over a stretch 10 or 20 cm. long at four different points. The patient had broken several ribs four days before the spastic ileus came on. The spastic contraction liable to follow a laparotomy is probably of this same class of cases, all traceable to some injury of the intestines from within or without. Morphin and atropin are the main reliance in treatment, but unless one is certain of the spastic nature of the trouble it is dangerous to give morphin with ileus as liable to mask the clinical picture. The spastic contraction may be the precursor of invagination and may outlast it. This occurred in a case in his experience, the infant dying from the persisting contraction after the invagination had been corrected by a laparotomy. In two other cases a girl of 8 and a young man had several stretches of intestine contracted and the bowel was found invaginated at two or more points. The young man's appendix had been removed for an abscess a few months before and the child had been taken suddenly sick after eating nuts. The laparotomy for

the ileus in each case was followed by complete recovery. There had been no blood in the stools in either case and no adhesions had developed.

65. **Secondary Anesthetic Fatalities.**—Keil has been analyzing and classifying 4,000 cases with general anesthesia given by various technics. There was no immediate fatality in any instance for which the anesthetic could be incriminated, but there were ten deaths which he thinks were the direct result of later injury from the anesthetic used. The first symptoms were observed the second day, with death the fourth day. The patients were between 38 and 61. His experience testifies to the smaller amount of anesthetic required when a mixing apparatus is used instead of the drop method. Preliminary scopolamin-morphin did not display any advantage over the ordinary technic in respect to lesser requirement of the chloroform and ether. The exact figures of the average amount of anesthetic used with each method for the total 4,000 cases are cited.

Medizinische Klinik, Berlin

May 17, X, No. 20, pp. 837-878

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They add: "To the question whether the Friedmann remedy is superior to other specific measures for treating tuberculosis the answer according to our results can be only in the negative. We believe positively that the few apparently favorable results which we have to chronicle in pulmonary tuberculosis and Poncet could have been attained with other measures. But we regard the dangers of the treatment as so great that we shall not apply it further. (*Wir halten die Gefahren der Behandlung für so gross, dass wir sie nicht weiter üben werden.*) This judgment is not qualified by the favorable result in the 3 joint cases. Such observations call for experimental following up of the subject; but they cannot justify the further therapeutic application of the remedy which has won disrepute in the majority of the cases by its failure to benefit and its harmfulness."

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the ileus in each case was followed by complete recovery. There had been no blood in the stools in either case and no adhesions had developed.

65. **Secondary Anesthetic Fatalities.**—Keil has been analyzing and classifying 4,000 cases with general anesthesia given by various technics. There was no immediate fatality in any instance for which the anesthetic could be incriminated, but there were ten deaths which he thinks were the direct result of later injury from the anesthetic used. The first symptoms were observed the second day, with death the fourth day. The patients were between 38 and 61. His experience testifies to the smaller amount of anesthetic required when a mixing apparatus is used instead of the drop method. Preliminary scopolamin-morphin did not display any advantage over the ordinary technic in respect to lesser requirement of the chloroform and ether. The exact figures of the average amount of anesthetic used with each method for the total 4,000 cases are cited.

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which a full report is given in the Society Proceedings Department of the *Wochenschrift*. All report "no benefit" and some describe actual harm done by the remedy. It had been administered in all cases by Friedmann himself. One of Bachrach's 5 patients had an isolated mild chronic tuberculosis of one kidney. After the Friedmann remedy had been given, the bladder lesions progressed rapidly and became much aggravated, and the kidney showed a fresh miliary eruption when it was finally removed after waiting three months for any possible benefit from the treatment. The conditions in this case were the most favorable possible, but aggravation rather than benefit was all that was realized. No benefit was observed in the other urogenital cases.

Jungmann reported similar discouraging results in 8 cases of lupus; no benefit has been apparent in the four or five months to date and in 3 cases the lupus has spread materially, the new patches promptly ulcerating. (A few of these cases were treated by Friedmann's assistant.)

Kovacs reported 7 cases of pulmonary tuberculosis. The course was not modified for the better in any instance. One patient died two weeks after the intramuscular injection and a subacute and acute miliary tuberculosis was found in the lungs and some other organs. He called special attention to this case as several others are on record in which this was observed, although it is of course impossible to prove any connection between the remedy and the miliary tuberculosis developing later.

Neumann commented on the way in which Friedmann in determining the indications pays heed only to the subjective symptoms and ignores the stage and extent of the tuberculous process. This rendered particularly noticeable the experiences in Ortner's service in that the subjective disturbances became much worse after injection of the Friedmann remedy. There was but slight reaction to the intramuscular injection (2 cases), but in the 6 intravenously injected cases severe injury followed. The temperature ran up to 104 F. in all and still higher in one (40 and 40.5 C.) and kept at this height for three days, accompanied by intensely severe headache, vomiting and brain symptoms. At the same time severe degeneration of parenchymatous organs was evident; the liver and spleen became much enlarged and tender; there was pronounced urobilinogenuria but elimination of galactose kept within normal range. In one case there was pronounced jaundice; in another subicterus of the conjunctiva. Albuminuria was evident in nearly every case; with tube-casts in one. The muscles became also intensely sensitive to contact, especially in the calf. The appetite was also poor for months, and for weeks there were repeated nausea and vomiting. All complained for months of a dull headache. The heart seemed to feel the deleterious effect most. The blood-pressure dropped 20 or 30 mm. mercury, and did not return to normal for two weeks. The heart became dilated, and systolic murmurs over the initial valve are audible, accompanied by palpitations and pains in the heart—all these symptoms persisting unmodified by valerian or bromids during the five months to date, and influenced only by strophanthus or digitalis. One elderly woman with a goiter had never had cause to complain of her heart before, but after the Friedmann injection she developed a perpetually irregular pulse with extreme weakness of the heart, edema in the legs, and cyanosis, requiring camphor and a course of digitalis, and the heart has not recuperated since.

In short, Neumann concluded, speaking for Ortner, the remedy is not so harmless as Friedmann would have us believe. The tuberculous processes were aggravated and injury of parenchymatous organs was evident, persisting for months and affecting the vital organs. The application of the remedy should be absolutely denounced.

Büdinger reported no benefit in his 4 cases and considerable aggravation in one. Föderl had negative results in all but one of his 5 cases. Nephrotomy had been done before the injection in this case and the operation was more than probably responsible for the improvement that followed. Improvement was noticed after the operation alone in a similar case not given the Friedmann treatment. In one case the injection was followed with fever, rapid pulse, vomiting and diarrhea.

Policlinico, Rome

May 1, Medical Section, No. 5, pp. 193-244

106 *Fat Necrosis in and Around the Pancreas. C. Verdozzi.
107 Primary Sarcoma of the Liver. (Sui sarcomi primitivi del fegato e su la migliore conoscenza anatomo-clinica delle neoplasie epatiche.) G. Pisano. Commenced in No. 4.
108 *Thick-Film Technic for Microscopic Work in Differential Diagnosis. P. Bosco.

106. **Fat Tissue Necrosis in and Around the Pancreas.**—Verdozzi has recently encountered a case of acute hemorrhagic pancreatitis and one in which there were only minute foci of fat necrosis in the interstitial tissue of the pancreas. He gives a colored plate of the findings and reviews the history of fat necrosis in this region and discusses the pathologic anatomy and syndrome. The attack came on before breakfast in one case; in the other after a hearty meal. In the latter case there was a history of recurring attacks of abdominal pain and vomiting, subsiding after a few days, and the pancreas showed signs of chronic inflammation. The temperature was subnormal in both the women; they were 68 and 78 years old and the first died in three, the other in thirteen days. The localization of the pain in the epigastrium and the meager findings on palpation in contrast to the grave general condition and distress, pointed to pancreatitis. The various hypotheses advanced to explain the fat necrosis are compared; Bignami's theory that the trouble is analogous to a peptic ulcer has much to sustain it.

108. **Thick Films in Microscopic Diagnosis.**—Bosco lauds the thick film technic as a great aid in diagnosis of malaria and relapsing fever.

Brazil-Medico, Rio de Janeiro

XXVIII, Nos. 16-17, pp. 153-172

109 *Endemic Adenomycosis. II. E. Dias.
110 *Yellow Fever. (Tratamento racional da febre amarella.) P. Valladares.
111 Causes of Fatalities at Operations. (Das causas do exito lethal nas operaçoes cirurgicas.) R. C. Prevost.
112 Brazilian Ornithostrongylus Parasites of Cattle and Fowls. (Tricostrongylinae brazileiras.) L. Travossos.
113 The Larvae of the Fly Does Not Feed Habitually on Cadavers. (A larva da mosca domestica é habitualmente necrophaga?) O. Freire.

109. **Endemic Adenomycosis.**—Dias here gives the description of the fungus causing the affection to which he called attention recently, as summarized in The Journal, May 30, p. 1765. He has named the fungus the *Adenomyces cruzi.*

110. **Yellow Fever.**—Valladares gives a number of reflections and suggestions based on the most recent progress in medicine which has thrown light on the symptoms seen in the yellow-fever syndrome for which the ductless glands are responsible. There is much evidence to show that, the acute phase once past, the acutely defective or perverted functioning of the adrenals in particular dominates the clinical picture. Treatment should aim to restore the lacking internal secretion. He proposes therefore as the logical treatment of yellow fever, venesection and saline infusion, lumbar puncture and the usual measures for revulsion. The usually early insufficiency of the liver should be combated with alkalines, sodium benzoate, ether and cold enemas twice a day. As soon as there are signs of defective adrenal functioning, epinephrin should be given systematically. This should be followed by serum from the renal vein of the goat, according to Teissier's technic (described in The Journal, Nov. 14, 1908, p. 1738), when symptoms suggest uremia or impending anuria. Still another measure to be systematically applied is baths if the temperature goes above 39 C., with other symptomatic measures as needed.

Hygiea, Stockholm

LXXVI, No. 8, pp. 449-512

114 Unilateral Eye Symptoms in Exophthalmic Goiter. (Var Landstroms förklaring till uppkomsten av ögonsymtomen vid morbus Basedowi riktig?) A. Troell.
115 Splenectomy in Treatment of Pernicious Anemia. R. Dahl.

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THE SERVICE OF MEDICINE TO CIVILIZATION *

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Fellow members of the American Medical Association: I wish to express my appreciation of the honor conferred on me in being called to officiate as your President at this time. I had been content to serve in the ranks, and I have regarded this position as too honorable to be sought, or to be lightly regarded when spontaneously bestowed. During my term of office I will give you my most devoted service.

In ancient times, civilization was born, grew for a few generations and fell into decay. In all instances it was local and covered only small areas. Its habitations were oases in the world-wide desert of ignorance and superstition, and after an ephemeral existence all were buried in the sand. Relatively small bodies of men occupying salubrious regions developed the elements of science and for a few centuries flourished. Their superior knowledge gave them dominion over their less fortunate neighbors, who were converted into slaves. Conquest brought disease and the local civilizations were obliterated by contagion. History is replete with instances in which triumphant heroes have brought to their rejoicing countries with their prisoners of war invisible and intangible agents of death, which have ultimately vanquished the victors.

The Egyptians of the Pharaohs drained the land, built aqueducts, disposed of their dead hygienically, reared temples and cities, maintained law and order, developed the elements of literature and science and devised and employed simple machinery. In speaking of the ancient Egyptians, Diodorus says: "The whole manner of life was so evenly ordered that it would appear as though it had been arranged by a learned physician, rather than by a lawgiver." Herodotus declared ancient Egypt the healthiest of countries, but filled with physicians of whom "one treats only the diseases of the eye, another those of the head, the teeth, the abdomen or the internal organs." Writing of a later time, Gibbon said: "Ethiopia and Egypt have been stigmatized in all ages as the original source and seminary of the plague." It is evident that in the time of its great civilization Egypt was salubrious; coincident with the decline in the learning and wisdom of its people, it was visited and desolated by pestilence. That Egypt had lost its salubrity as early as the period of the exodus of the Israelites is shown by many passages in the Bible in which the chosen people are threatened with the diseases of Egypt if they neglect or violate the laws. Moses, "learned in all the wisdom of the Egyptians," codified his sanitary rules and regulations in the form of religious rites and ceremonies and thus secured their observance among the faithful even down to the present time.[1]

The Greek developed the most glorious civilization of antiquity because he was the most ardent student of science, but he was unable to cope with malaria and bubonic plague, and his descendants have been in bondage to malaria for nearly twenty-four centuries. The medicine of Hippocrates, the wisdom of Socrates, the philosophy of Plato, the plays of Aristophanes, the laws of Pericles and the science of Aristotle could not save the Greek from the degrading effects of disease, and under its withering influence the civilization of this great people slowly but surely decayed. Its matchless marbles were thrown into the waste, its magnificent temples were allowed to crumble, its altars were deserted, its literature became insipid, its philosophy lost its virility, its science was forgotten and the children of this blighted civilization were sold in the slave markets of Rome and in later generations paid tribute to the Slav and the Turk. There certainly were eminent Greek scientists and physicians for centuries after Hippocrates, but they were not products of Greek soil. They developed in Asia Minor, Egypt, Italy and elsewhere. It is of interest to note in this connection that malaria, according to Jones, was introduced into Greece in the fifth century, B. C., and the fourth century showed the decline of Hippocratic medicine. Neuburger says: "The sons and grandsons of Hippocrates, as well as his immediate disciples, Apollonios and Dexippos, were at the head of that series of physicians who laid emphasis upon theoretical conjecture and gave to medicine in the fourth century B. C. its speculative coloring." Taken with the fact that other departments of learning showed similar retrogression at the same time, this sequence between the introduction of malaria and the trend of medicine toward speculation is worthy of record. That pestilence aided the barbarians in the final desolation of Greece is indicated by the following quotation from Thumb:

> At a time when the German tribes began moving, that is to say, at the end of the third century A. D., a gradual immigration of Slavonic tribes into the Balkans began; their

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* President's address before the American Medical Association, at the Sixty-Fifth Annual Session, Atlantic City, June, 1914.

[1] Neither the papyrus of Ebers nor that of Brugsch throw any light on the problems discussed in this article. Indeed the value of both these papyri was at first overestimated. They are now regarded as compilations and consist largely of lists of remedies and furnish no information concerning epidemics or their effects upon the people, except to indicate that hookworm or bilharzia infection, one or both, at that time (about 1500 B. C.) afflicted the Egyptians. These parasites may have contributed to the deterioration of the people; this is a suggestive possibility.

invasions became more and more frequent, since the Goths chose Western Europe as the goal of their conquering expeditions and left to the Slavs an open passage into the Balkan countries. But a real Slavonisation of some Greek territories took place only in the eighth century, and attained its highest point when a horrible plague in 746 depopulated the Greek territories.

I am aware of the fact that some have objected to considering the present inhabitants of Greece as descendants of ancient Greeks. The former have been designated as "so-called Greeks," "a bastard people," "a mosaic of Vlacks, Arnauts and Slavs." Some years ago Fallmerayer made the very positive statement that "no drop of ancient Greek blood flows in the veins of the modern Greek." Thumb has shown the absurdity of these statements and declares that cranial measurements, local names, customs and religion show that while some admixture with the Slav has taken place, the modern Greek is a lineal, and on the whole a fairly pure descendant of those who established the greatest civilization of antiquity. Modern Greek Christianity is only a modification of ancient Greek paganism, in which gods have been supplanted by saints. "Charon the old ferry-man in the underworld is to-day the god of death; he conducts the souls in a dreary procession to his realm. As in antiquity, a copper coin is put into the mouth of a dead person as a fee for the ferry into the other world. The ancient Moirai or fates (to-day, Mires) still determine the fate of the new-born child, spin and cut the thread of life. The bride is conducted into her new home, the dead are buried with ceremonies which the Greeks used already two thousand years ago. A sick person seeks recovery by laying down to sleep in the church of a saint, like those persons who once made a pilgrimage to the temple of Asklepios in Epidaurus. The Greeks of to-day are descendants of the ancient Hellenes, not in the sense in which every modern Greek ould trace his origin back to an ancient Athenian or partan, but in the sense that in the modern people ancient blood flows largely and in some districts almost purely, and still more in the higher sense that the modern race shows a development of the Greek population of the ancient world."

The broken remnants of older civilizations found refuge and asylum in the salubrious climate of the Italian peninsula and soon its hillsides were covered with vines and olives while its plains and valleys bore abundant harvests. Rome was built and her empire promised to extend to the remotest parts of the world, but the ancient Roman contributed but little to science, and we are told by the historian that "a pestilence raged for fifteen years (251-265) and carried off one-half of the inhabitants of the Empire." The seat of civilization was moved to the shore of the Bosphorus, but the lamp of science was well-nigh extinguished and the clouds of the middle ages enveloped the world and shrouded its inhabitants for more than a thousand years. "A fabulous and formless darkness overcame the fairest things of earth."

If one reads the history of the decline of the Roman Empire, he can hardly fail to see that disease was an important factor in that retrograde movement, which involved the greater part of the then known world. Jones and Ross find the earliest reference to malaria among the Romans in the comedian Plautus, who died 184 B. C., and they quote Terence, who died 159 B. C., and whose language is explicit in showing not only the prevalence of malaria, but also the recognition of the different forms. From that time on, reference to the wide prevalence of malarial diseases, not only in the open country, but also in the city, is frequent and definite. Jones says:

> There is then, every reason for supposing that malaria was unknown in Italy in early times, was well known at the beginning of the second cenutry B. C., and that it gradually became more common during the next two hundred years. If this be so, it is at least a plausible conjecture that it was introduced by Hannibal's Carthaginian mercenaries. Africa seems to have been the original home of the disease, and it is probable that some of his troops were infected. The constantly repeated devastation of Italy in the second Punic war would be sure to turn a large part of it into marshy land, thus affording a convenient breeding-place to the mosquitoes which were infected by the malarial patients among the Carthaginians. The similar conditions of Attica during the closing years of the fifth century B. C. offers a striking parallel. This opinion does not rest on mere conjecture. We are told by Livy that in the year 208 B. C. a severe epidemic attacked Italy. It did not cause many deaths, but resulted in much lingering disease, that is, most probably, chronic malaria.

Malaria, however, was not the only disease which contributed to the degeneration of the Roman people. I have already referred to the pestilence of the third century, which is said to have destroyed half the inhabitants of the vast empire within fifteen years. This certainly was not malaria. Moreover, this was not the first great pestilence which afflicted the Roman Empire. Neuburger says:

> The "plague," so called by Galen or Antonine, was first introduced from Syria by the Roman army. . . . The extraordinary contagiousness of the epidemic is emphasized in all contemporary reports. There appear to have been a variety of simultaneous manifestations, the descriptions indicating afflictions chiefly resembling small-pox, or dysentery, but adequate criteria on which to express an opinion are wanting. The "plague" commenced 165 A. D., claimed innumerable victims and lasted at least fifteen years.
>
> Jerome writes: With peace, order and good government a curious lethargy fell on the warrior state deepening into a coma in which it died so quietly that neither the contemporaries nor we moderns can fix the date of the decease. The fact, however, finally became apparent when the phenomena of decay were indubitable and the world, deprived of the master, fell back helplessly into a condition hardly more advanced than in the ages before its subjection, save that it had the imperishable memory of Rome to give it hope, direction and courage.

In the fourth century the seat of government was removed to Byzantium. It is probable that this change was, in part at least, determined by the insalubrity of Italy. Early in the fifth century Rome was pillaged, but the real conquerors of Rome were not the Goths and Vandals, but malaria and the plague. Disease continued to devastate Italy. Creighton says:

> About the year 668 the English archbishop-elect, Vighard, having come to Rome to get his election confirmed by the pope, Vitalanius, was soon after his arrival cut off by the pestilence with almost all who had gone with him. Twelve years after, in 680, there was another severe pestilence in the months of July, August and September, causing a great mortality at Rome and such a panic at Pavia that the inhabitants fled to the mountains. In 746 a pestilence is said to have advanced from Sicily and Calabria and to have made such devastation in Rome that there were houses without a single inhabitant left.

From that time on the plague periodically spread over Italy until the seventeenth century, while malaria has been in continuous possession down to our own time. We are told that the epidemic of 1348 reduced the inhabitants of the Eternal City to 20,000.

We are familiar with the graphic description of the plague in Florence by Bocaccio, who wrote:

> Such was the cruelty of Heaven, and perhaps of men, that between March and July following, it is supposed, and made pretty certain, that upwards of a hundred thousand souls perished in the city only, whereas, before that calamity, it was not supposed to have contained so many inhabitants. What magnificent dwellings, what noble palaces were then depopulated to the last person, what families extinct, what riches and vast possessions left, and no known heir to inherit, what numbers of both sexes in the prime and vigor of youth — whom in the morning neither Galen, Hippocrates nor Esculapius himself, but would have declared in perfect health — after dining heartily with their friends here, have supped with their departed friends in the other world.

There are but few passages in literature so tragic as the short record of the plague of the fourteenth century begun by the friar of Kilkenny, but soon interrupted by his death:

> I friar, John Clyn, of the order of Friars Minor and of the convent of Kilkenny, wrote in this book those notable things which happened in my times, which I saw with my eyes, or which I learned from persons worthy of credit. And lest these things worthy of remembrance should perish with time and fall away from the memory of those who are to come after us, I, seeing these many evils, and the whole world lying, as it were in the wicked one, *among the dead, awaiting death*—as I have truly heard and examined, so have I reduced these things to writing; and lest the writing should perish with the writer, and the work fail altogether with the workman, I leave parchment for continuing the work, if haply, any man survive, and any of the race of Adam escape this pestilence and continue the work I have commenced.

That the period of the Byzantine Empire (395-1453) was one of general degeneracy is shown on every page of the historian. It produced no literature of merit, and "the study of nature was regarded as the surest symptoms of an unbelieving mind." Neuburger says:

> The Byzantines merely followed the downward path. Surfeited with tradition, which made modes of thought appear inevitable, because customary, filled as a nation with overweening self-conceit, fed by the glories of the Graeco-Roman past, they neither could nor would destroy the historic bridge nor replace the crumbling ruin with a new edifice. It lay outside the sphere of their interests to enter into that conscious emulation of antiquity which, emphasizing the growing contrast between past and present, and eliminating the obsolete and the inert, is the essence of mental cultivation. Forgetting that it was the free development of the national spirit which constituted the greatness of the past, they went so far as to smother its liveliest expression by denying, in their rigid adherence to Attic speech, all part in literature to the language of the people. The more incapable did the Byzantines become of grasping the spirit, the more tenaciously did they cling to the letter — a reflection of the mania for titles and ceremonies in political life — and thus they dragged the inanimate mechanism, the dry bones of antiquity through a thousand years, instead of erecting a new edifice on the foundations of antiquity.

The physician and historian, Procopius, in his account of the great pestilence in the reign of Justinian "emulated the skill and diligence of Thucydides in the description of the plague at Athens." Of this epidemic Gibbon says:

> In time its first malignancy was abated and dispersed; the disease alternately languished and revived; but it was not till the end of a calamitous period of fifty-two years, that mankind recovered their health, and the air resumed its pure and salubrious quality. No facts have been preserved to sustain an account, or even a conjecture, of the numbers that perished in this extraordinary mortality. I only find that during three months, four and at length ten thousand persons died each day at Constantinople, that many cities of the east were left vacant, and that in several districts of Italy, the harvest and the vintage withered on the ground. The triple scourge of war, pestilence and famine afflicted the subjects of Justinian, and his reign is disgraced by a visible decrease of the human species, which has never been replaced in some of the fairest countries of the globe.

This epidemic spread over the whole of Europe and it took more than a century to reach England, where "it fabled long after in prose and verse as the great plague of Cadwalladers time." Then for quite a thousand years it reaped its periodic harvests as often as immunity was lost in new generations.

The historian, as a rule, confines his descriptions to martial and political events and consequently gives a wholly erroneous idea of true conditions. Gibbon says: "If a man were called upon to fix the period in the history of the world, during which the condition of the human race was most happy and prosperous, he would without hesitation, name that which elapsed from the death of Domitian to the accession of Commodus" (from 96 to 180 A. D.). Noah Webster, in his work on epidemics and pestilence, quotes the preceding with the following just comment:

> It is certain that, at this time, the Roman Empire was in its glory, and governed by a series of able and virtuous princes, who made the happiness of their subjects their principal object. But the coloring given to the happiness of this period is far too brilliant. The success of armies and the extent of empire do not constitute exclusively the happiness of nations; and no historian has a title to the character of fidelity, who does not comprehend, in his general description of the state of mankind, moral and physical, as well as political evils.

Let us make brief inquiry into the diseases of this "most happy and prosperous" period. It was preceded by, it begun in, continued in, and closed in pestilence. That the plague was endemic in Italy at that time and that it developed in epidemic form with each increase in susceptible material there can be no doubt. Of the epidemic of 68 A. D. Tacitus says:

> Houses were filled with dead bodies and the streets with funerals; neither age nor sex were exempt; slaves and plebeians were suddenly taken off, amidst the lamentations of their wives and children, who, while they assisted the sick, or mourned the dead, were seized with the disease, and perishing, were burned on the same funeral pyre. To the knights and senators the disease was less mortal, though these also suffered in the common calamity.

About this time the plague appears to have spread over the whole of Asia, northern Africa and Europe. According to Short, the deaths from this disease in Scotland between 88 and 92 A. D. amounted to not less than 150,000. This was probably not less than one-fourth, possibly one-half, the population of Scotland at that time.

In the year 80 A. D. the deaths from the plague in Rome at the height of the epidemic numbered 10,000 a day. It is estimated that the population of Rome at that time was somewhat more than one million. Exacerbations of the disease in Rome are recorded for the years 102, 107 and 117 A. D. According to Short, 45,000 died of the plague in Wales in 114. The year 167 A. D. is noted for an unusually severe outbreak of the plague at Rome, where it continued for many years. In the year 173 A. D., the Roman army was threatened with extinction by disease, and special epidemics, or rather exacerbations of the epidemic, prevailed in Rome in 175 and 178 A. D. That the "happy and prosperous" period was followed by a continuation of the plague is shown by the following quotation from Herodian:

> A great pestilence raged throughout Italy at that time (about 187 A. D.), but with most violence in the city, by reason of the great concourse of people assembled from all parts of the earth. The mortality among men and cattle was great. The Emperor, by advice of physicians, retired to Laurentium, on account of the coolness of the place, which was shaded with laurels. It was supposed that the fragrance of the laurels acted as an antidote against the contagion. The people in the city also, by the advice of physicians, filled their noses and ears with sweet ointments and used perfumes, etc.

Under the spell of the historian we have been inclined to regard the period when the greater philosopher, Marcus Aurelius Antoninus, sat on the throne of the world, as the golden age. Let us therefore listen to a few words from his personal attendant, courtier and historian, who writes:

> Unless he, M. Antoninus, had been born at this juncture, the affairs of the empire would have fallen into speedy ruin; for there was no respite from military operations. War raged in the east, in Illyricum, in Italy and in Gaul. Earthquakes with the destruction of cities, inundations of rivers, frequent plagues, a species of locusts ravaging the fields; in short every calamity that can be conceived to afflict and torment man scourged the human race during his administration.

It is estimated that during the dark ages the average of human life was less than twenty years. A high birth-rate was necessary to keep the race alive, but notwithstanding this, Europe was sparsely inhabited. At the time of the Norman Conquest the inhabitants of England numbered between two and two and one-half million, probably nearer the former, for they had not reached the greater number a hundred years later. Creighton says: "It would be within the mark to say that less than one-tenth of the population was urban in any distinctive sense of the term. After London, Norwick, York and Lincoln, there were probably no towns with five thousand inhabitants." Indeed, urban life, as we now know it, was quite impossible in this age of pestilence and would soon become so again were the functions of preventive medicine relaxed.

Most of the great epidemics of the middle ages were designated as *pestilentia or magna mortalitas*. In the most deadly visitations the bubonic plague is so accurately described that there can be no doubt about its identity, but it must not be supposed that the people enjoyed any high degree of health even in those periods when this contagion languished on account of exhaustion of susceptible victims. Ergotism, under the name of Saint Anthony's fire, was endemic in France and adjacent territories; Normandy was filled with lepers, but Christ's poor were not confined to that country. England was regarded as the special home of hunger, but abundance was a stranger to the masses in every land. The mysterious sweating sickness, apparently brought to England with Henry Tudor in 1485, developed in five distinct epidemics which were characterized by the fact that the mortality was greater among the rich than the poor. Typhus, known as *morbus pauperum*, prevailed largely in the jails, on ships and among the squalid inhabitants of the cities. Even the discovery of America carried to Europe the scourge of syphilis, which was spread over Italy by the soldiers of Charles VIII, and within a few years reached the most distant parts of Europe. Small-pox appeared in England in the sixteenth century, having journeyed, according to the most reliable authority, all the way from the Orient. That tuberculosis, diphtheria, dysentery and other diseases, still with us, prevailed during the middle ages is shown by the records, but they were overshadowed by the higher mortality of those mentioned above. Improved agriculture has extinguished the fire of St. Anthony, except in the most benighted provinces of Russia. The great fire in London in 1666 destroyed the infected rats and relieved England of the bubonic plague, which had been endemic in that country since 1349. Something more than one hundred years later the discovery of Jenner robbed small-pox of its horrors, wherever vaccination is properly enforced. The investigations of Howard improved the sanitation of jails and workhouses, and did much to eradicate typhus.

The claim has been advanced that the infectious diseases have benefited the race by the destruction of the unfit. This idea I have combated most vigorously since our study of typhoid fever in the Army in 1898. My colleagues and I found that out of 9,481 soldiers who had previously been on the sick report and could not be regarded as possessing standard health, 648, or 6.8 per cent., contracted typhoid fever; whereas, out of 46,384 men who had no preceding illness, 7,197, or 15.3 per cent., developed typhoid fever. More than 90 per cent. of the men who developed typhoid had no preceding intestinal disorder. Under ordinary conditions the strong, busy man, especially the one whose activities demand wide excursions from his home, is more likely to become infected than the one whose sphere of action is more limited on account of infirmity. The reason for this is too obvious to need statement, and it follows that more men than women and more adults than children have typhoid fever. Moreover, the case mortality is greater among the strong, because death in the infectious diseases is often due to the rapidity with which the invading organism is broken up by the secretions of the body cells and the protein poison made effective. From this I have concluded that contagion, like war, destroys the very flower of the race. This view is sustained by the historians of the pestilences of former times.

Thucydides in his description of the plague at Athens says: "Moreover, no constitution, whether in respect of strength or weakness, was found able to cope with it; nay, it swept away all alike, even those attended to with the most careful management."

Procopius in his account of the Justinian epidemic states that youth was the most perilous season, and females less susceptible than males.

Cogan, in describing the outbreak of typhus at Oxford in 1577, writes: "The same kind of ague raged in a manner over all England, and took away very many of the strongest sort, and in their lustiest age, and for the most part, men and not women and children, culling them out here and there, even as you would choose the best sheep out of a flock."

In his account of the plague of 1665 in London, Boghurst makes the following statement: "Of all the common hackney prostitutes of Luteners-lane, dog-yard, cross-lane, Baldwins-gardens, Hatton-gardens and other places, the common criers of oranges, oysters, fruits, etc., all the impudent drunken, drubbing bayles and fellows and many others of the *rouge route*, there is but few missing — verifying the testimony of Diemerbroech that the plague left the rotten bodies and took the sound." Like testimony comes from an account of the plague at Moscow: "Drunkards and persons of feeble temperament were less subject to attack."

Davidson observed that typhus fever was more frequent among the robust than the weak. He states that out of 429 cases the spare and unhealthy taken together made only about 17 per cent. He adds that the death-rate among the poor was one in twenty-three, while among the well-to-do it was one in four. The greater mortality of typhus among the higher classes has been noted by Barber and Cheyne and by Braken.

Hurty, nearly a century ago, wrote: "A fever which consigns thousands to the grave, consigns tens of thousands to a worse fate — to hopeless poverty, for fever spares the children and cuts off the parents, leaving the wretched offspring to fill the future ranks of prostitution, mendicancy and crime."

Creighton says:

> The best illustrations of the greater severity and fatality of typhus among the well-to-do come from Ireland in times of famine, and will be found in another chapter. But it may be said here, so that this point in the natural history of typhus may not be suspected of exaggeration, that the enormously greater fatality of typhus (of course, in a smaller number of cases) among the richer classes of the Irish families, who had exposed themselves in the work of administration, of justice, or of charity, rests on the unimpeachable authority of such men as Graves, and on the concurrent evidence of many.

A surgeon in the British navy at the time of William III and Anne tells how he was led to practice bleeding in fever as follows:

> I had observed on a ship of war, whose complement was near 500, in a Mediterranean voyage in the year 1694, when we lost about 90 or 100 men, mostly by fever, that those who died were commonly the young, but almost always the strongest, lustiest, handsomest persons, and that two or three escaped by such natural hemorrhages, which were five or six pounds of blood.

The middle ages were indeed dark physically, intellectually and morally. Here and there, now and then, some man of genius towered above the general low level of his contemporaries and not infrequently he paid dearly for his audacity. For some centuries the Arab, especially in Spain, stood out alone as the torch-bearer of science, and he, when driven back into the insalubrity of Northern Africa, lapsed into barbarism. Neuburger writes:

> Fortunately the fate of medieval medicine was not dependent on Byzantium alone. An admirable illustration of the doctrine of conservation of energy is afforded by the fact that, with the decline of intellectual energy at home, a contemporaneous development of Greek medicine took place abroad, which, if at times misguided, was yet full of vitality, whilst the medical art of the newly arisen world of Islam reached a height unsurpassed during the middle ages.

In the greater part of Europe, ignorance and disease held full sway. In the midst of great calamities "the will-o-the-wisp of superstition is an irresistible attraction and offers the only ray of hope." Strong men, neglectful of their earthly duties, betook themselves to secluded places and lost themselves in dreams of a heavenly paradise. Mysticism, fanaticism and superstition dominated all conditions of men. Rulers, illiterate, immoral and even incestuous, occupied palaces while the masses died of starvation. The history of the time is a record of diseased, degenerated, demented man. There can be no doubt that disease has overthrown civilizations in the past, and there is no surety that it may not do so again. The recent outbreak of the plague in Manchuria and its more recent appearance in Cuba are not without their warnings. It remains to be seen if those who control our government have the intelligence necessary to protect our country against the invasion of pestilence. The failure to provide for camp sanitation in 1898, the behavior of California officials on the finding of plague in San Francisco and the general indifference of national and state authorities toward the eradication of disease discourage the hope that intelligent patriotism is widely distributed among us. As a contemporary of Mr. Dowie and Mrs. Eddy and as a citizen of a country in which the osteopath and chiropractic flourish, I feel some embarrassment in speaking of the fanaticism and ignorance of the dark ages.

The history of medicine is that of mankind. Born in naked ignorance, bound in the swaddling-clothes of credulity and nursed on superstition, medicine has had its savants and its fakers, its triumphs and its failures, its honors and its disgraces. It has attracted and still attracts to its ranks men of the purest motives and those who are impelled by the basest desires. It can be said without fear of contradiction that medicine has done more for the growth of science than any other profession, and its best representatives in all ages have been among the leaders in the advancement of knowledge, but the average medical man conforms in intellect and character to the community in which he lives. The food of the faker is ignorance and he thrives where this commodity is most abundant. The uncontrolled fool moves to his own destruction. This is the only way in which Nature can eliminate him. A wise government protects its incompetents from medical and other fakers, but such government can exist only where wisdom predominates.

A study of epidemics shows that in the presence of wide-spread contagion mankind in the mass tends to revert to the barbaric state. This is the unvarying testimony of all authorities, medical and lay, secular and religious, who have made the records. The historian Niebuhr, in discussing the report on the plague in Athens by Thucydides says: "Almost all great epochs of moral degradation are connected with great epidemics." F. A. Gasquet, abbot president of the English Benedictines, in his history of the black death, writes: "The immediate effect on the people was a religious paralysis. Instead of turning men to God, the scourge turned them to despair, and this not only in England, but in all parts of Europe. Writers of every nation describe the same dissoluteness of manners consequent upon the epidemic." A Venetian historian notes the general dissoluteness which followed the disease and its effects in lowering the standard of probity and morals. Covino of Montpellier bears testimony to the baneful effects of the scourge on the morals of those who escaped, and concludes that such visitations exercise the most harmful influence on the general virtue of the world. William of Nangis, in his history of the plague in France in 1348, con . . with the following:

> But alas! the world by this renovation is not changed for the better. For people were afterwards more avaricious and grasping, even when they possessed more of this world's goods than before. They were more covetous, vexing themselves by contradictions, quarrels, strifes and lawsuits.

Many similar references could be given, but these suffice to show that disease breeds ignorance, immorality and strife. Our inquiries into the influence of disease on civilization, however, have brought out the fact that people living in comparative health have within a few generations made beginnings, at least, some, highly creditable, in government, literature and science. The Hellenic tribes of Greece built up their wondrous civilization within a few centuries. It is true that Rome was not built in a day, but the seven hills were covered with houses and temples, the great aqueducts brought abundant supplies of pure water from the mountains and the wonderful sewers remain as evidence of sanitary skill, and all this was accomplished in a relatively short period measured in the history of the race. The world moved forward at a rapid pace with the dawn of science in the last century. It is not extravagant to prophesy that with ten centuries of freedom from disease, both inherited and acquired, the world would be regenerated and the superman be born.

It is not necessary to turn to history for examples of the degrading effects of disease on man. We see it to-day in the physical inferiority, intellectual weakness and moral irresponsibility of those peoples who are still under the domination of malaria and kindred diseases. My illustrious predecessor in this office, Dr. Gorgas, has demonstrated what scientific medicine may accomplish in these pestilential regions, and it is within reason to look forward to the time when the tropics may supply choice locations for civilized man. In like manner the valleys of the Tigris and Euphrates are being reclaimed and Babylon and Nineveh may again become seats of learning and culture. The modern sanitarian is quite competent to rebuild the home in which the cradle of civilization was rocked.

After the last epidemic of the plague in London in 1665 the death-rate, so far as it can be ascertained, fell to between 70 and 80 per 1,000. During the next century it fell as low as 50, but fluctuated greatly with recurring epidemics of typhus and small-pox. In the nineteenth, it gradually and quite constantly decreased and is now about 14. In 1879-80, the first year in which the mortality statistics of the United States possess sufficient accuracy to be of any value, the death-rate in the registered area was 19.8; in 1912 it was 13.9 — a decrease of 30 per cent. During the same time the mortality from typhoid fever has decreased 50 per cent.; that from scarlet fever 89 per cent.; that from diphtheria 84 per cent.; that from tuberculosis 54 per cent Hoffman states that had the death-rate for tuberculosis in 1901 continued there would have been 200,000 more deaths from this cause from that date to 1911 than actually did occur, or the actual saving of lives from death by tuberculosis accomplished in that decennium averaged 20,000 per year. A battle in which 20,000 are slain stirs the world at the time and fills pages of history later. Preventive medicine measures its successes by the number of lives saved, and 20,000 a year preserved from death from one disease is no small triumph. In the last century the average of human life has been increased fifteen years and this increase could be duplicated in the next twenty years if the facts we now possess were effectively employed.

Hoffman further states that the addition to the material wealth of this country secured by the reduction of deaths from tuberculosis within ten years amounts approximately to 6,200,000 years of human life, covering its most productive period. Medicine discovered the facts which have made this great work possible and has directed their application. With evidence of this kind before them, will our lawmakers listen to those who demand recognition as practitioners of medicine without proper qualification?

The further developments of medicine, both curative and preventive, depend on scientific investigations. The public is the beneficiary and should in every way encourage medical research. By the application of discoveries already made, the burden of disease has been lightened, sickness has become less frequent and less prolonged, a greater degree of health has been secured, the efficiency of the individual and of the nation has been increased and life has been prolonged and made more enjoyable. The federal government and the states should sustain and promote scientific research. That government is the best which secures for its citizens the greatest freedom from disease, the highest degree of health and the longest life, and that people which most fully secures the enjoyment of these blessings will dominate the world.

Medicine consists of the application of scientific discovery to the prevention and cure of disease. All else which may go under the name of medicine is sham and fraud. Without advancement in the physical, chemical and biologic sciences there can be no progressive movement in medicine. Scientific knowledge is gained only by observation and experiment. Before the time of Jenner, we are told by the historian, it was unusual to meet in London one whose face was not marked by small-pox. There was a popular belief that one who had cow-pox was immune to small-pox. Jenner put this belief to a scientific test and the result was the discovery of vaccination, and this secured the abolition of this disfigurement and a marked reduction in mortality.

In 1849, a village doctor, with a crude microscope, studied the blood of animals sick with anthrax and compared it with that of healthy ones. He discovered the anthrax bacillus. This work was extended by Davaine, Pasteur, Koch and others, and from this the science of bacteriology has been developed. The particulate causes of many infectious diseases have been recognized, isolated and their effects on animals demonstrated. Many of the mysteries of contagion have been revealed and the conditions of the transmission of disease made known. The fundamental principles of preventive medicine have been developed into a science which is to-day the most potent factor in the progress of civilization.

Finlay suspected a certain mosquito to be the carrier of the virus of yellow fever. Reed and his co-workers demonstrated the truth of this theory and the work of Gorgas has freed Havana from the pestilence and the construction of the Panama Canal is an accomplished fact.

We are sorry for the Greek, whose bodily health, mental strength and moral sense were depressed by the invisible and insidious organisms of malaria, and truly his memory deserves our sympathy. He had no microscope, and how could he detect or even suspect that the mosquitoes which had annoyed his ancestors for generations had armed their lancets with deadly poison brought from Africa? The Greek had never heard of quinin and the other cinchona alkaloids. He did not know the land whose forests were even then elaborating those products, which, centuries later, were of greater value than gold to man, and proved to be an essential help in the uplift of mankind. Laveran discovered the *Plasmodium malariae.* Ross studied its life history and the fetters of this disease, which has so long retarded the progress of man, have been broken. Mitchell and Reichart investigated the poisonous properties of snake venon. Sewall immunized animals with it. Ehrlich studied the similar bodies, abrin, ricin and diphtheria toxin, and von Behring and Roux gave the world antitoxin, the magical curative value of which has greatly reduced the mortality from this disease. The experiments of Villemin demonstrated the contagious nature of tuberculosis, long suspected and frequently denied. The diligent research of Koch resulted in the [illegible] and isolation of the causative agent, and [illegible] the mortality of the Great White Plague in Europe and the United States has been diminished more than half, and it is within the range of sanity to look forward to the time, when the former "Captain of the hosts of death" will be known only by the fearful records he once made in the history of man's struggle to be relieved from the heavy tribute paid to infection.

We boast of a great civilization, but this is justified only within limits. Science more nearly dominates the world than at any time in the past. Learning permeates the masses more deeply, but credulity and ignorance are widely prevalent. In this country of nearly one hundred millions, there are thousands whose greed impedes the progress of the whole, tens of thousands whose ignorance retards their own growth, and other thousands who live by crime and procreate their kind to feed on generations to come. We have our schools, colleges and universities, while our almshouses, insane asylums and penal institutions are full. In our cities we see the palatial homes of the ultra rich, the splendid temples of trade and commerce, the slums of want and poverty and the homes, both rich and squalid, of vice and crime. No nation in this condition can be given a clean bill of health. Our hill-tops are illuminated by the light of knowledge, but our valleys are covered by the clouds of ignorance. We have not emerged from the shadows of the dark ages. The historian of the future will have no difficulty in convincing his readers that those who lived at the beginning of the twentieth century were but slightly removed from barbarism, as he will tell that the school, saloon and house of prostitution flourished in close proximity; that the capitalist worked his employees under conditions which precluded soundness of body; that the labor union man dynamited buildings; that whilst we sent missionaries to convert the Moslem and the Buddhist ten thousand murders were committed annually in our midst, and that a large percentage of our mortality was due to preventable disease.

Evidently there is much to be done before we pass out from the shadows of ignorance into the full light of knowledge. In this great work for the betterment of the race the medical profession has important duties to perform. I do not mean to imply that the uplift of mankind devolves wholly on the medical man. The burdens are too many and too diversified, the ascent too steep and the pathways too rough for one profession to hope to reach unaided the high plateau we seek. Moreover, other callings have no right, and should have no desire, to shirk the moral responsibilities, which rest alike on all. But in past ages, medical men have been the chief torch-bearers of science, the only light in which man can safely walk, and we must keep and transmit to our successors this trust and honor. I know of no scientific discovery, from the ignition of wood by friction to the demonstration of the causes of infection and the restriction of disease, which has not sooner or later assisted in the betterment of the race. It may be added that nothing else has so aided man in his slow and halting progress from the pestilential marshes of ignorance to the open uplands of intelligence.

In so great a work as the eradication of preventable disease, all intelligent people must cooperate. The law must support by proper enactments, and these must be enforced with justice and intelligence; it must recognize that the right to enjoy health is quite as sacred as that to possess property; that to poison men in factories and mines, to pollute drinking water-supplies, to adulterate foods and to drug with nostrums is manslaughter. Religion must teach the sanctity of the body as well as that of the soul, that ignorance is sin and knowledge virtue, that parenthood is the holiest function performed by man and that to transmit disease is an unpardonable sin. The teacher must know hygiene as well as mathematics. The capitalist must recognize that improvement in health and growth in intelligence increase the efficiency of labor. There never has been a time when scientific medicine has had so many and such efficient and appreciative helpers as it has to-day. Our sanitary laws are for the most part good, but their administration is weak, on account of ignorance. The pulpits of the land are open, for the most part, to the sanitarian. The respectable newspapers are most effective in the crusade against quackery and disease. The philanthropist has learned that the advancement of science confers the greatest and most lasting benefits on man.

There is a moral obligation to be intelligent. Ignorance is a vice and when it results in injury to any one it becomes a crime, a moral, if not a statutory one. To infect another with disease, either directly or indirectly, as a result of ignorance, is an immoral act. The purpose of government is to protect its citizens, and a government which fails to shelter its citizens against infection is neither intelligent nor moral. To transmit disease of body or mind to offspring is an unpardonable sin. In a reasonable sense it is worse than murder, because it projects suffering into the future indefinitely.

That medicine has become a fundamental social service must be evident. To return one incapacitated by illness or injury to the condition of self-support benefits not only the individual, but the community, inasmuch as it increases its productive capacity. Infirmity is a direct burden on the individual and scarcely less direct on the community. Weakness in any part diminishes the strength of the whole. It is a fully established principle in social economy that widespread intelligence and growth in knowledge are beneficial to the state.

It was in full recognition of this that the framers of the Ordinance of 1787 wrote into that immortal document: "Religion, morality and knowledge being necessary to good government and the happiness of mankind, schools and the means of education shall forever be encouraged." The Territory of the Northwest, the government of which was provided in this ordinance, was at that time a vast waste of forest and prairie, furnishing a scant and precarious subsistence for savage tribes and attracting to its borders a few of the most hardy sons of civilization. The knowledge for whose growth and diffusion the wise provision was made, has drained the malarial marshes, converted wild prairie and tangled wood into fruitful orchards and fertile fields, dotted the whole area with neat villages, reared great cities, linked all parts with steam and electric roads, and provided comfortable homes and abundant food for millions. The men who wrote the Ordinance of 1787 left a great inheritance which is temporarily in our possession. Let us write into this great document: "Every ill which can be relieved shall be removed, and every preventable disease shall be prevented." The wisdom of our fathers has secured for us a greater measure of health and a longer term of life; let us do as well for those who are to possess this fair land in the next generation. Let us live not only for ourselves and the present, but for the greater and more intelligent life of the future.

Not myself, but the truth that in life I have spoken
Not myself, but the seed that in life I have sown
Shall pass into ages — all about me forgotten,
Save the truth I have spoken, the things I have done.

All things are relative and health is no exception. With a greater degree of health among all, religion will become more effective for good, morality will have a deeper significance and a wider application and knowledge will multiply and distribute its blessings more widely.

In the further improvement of the physical, mental and moral conditions of the race, medicine should continue to be a leader. There is no other calling so essential to this movement, and in order to more thoroughly fit itself for this important task the profession should first of all look to its own betterment. The medical man should possess intelligence of high order, manifest industry without stint and show the highest integrity in all he does. That it is the aim of this Association to attract to its colors men possessing these qualifications and to deny admission to others is shown by the advance in the standard of medical education, the enforcement of medical registration laws and the denunciation of every form of medical charlatanism. In all these directions the profession has the support of the more intelligent men in other callings. The improvement in medical training secured within recent years in this country is without a parallel in the history of education. The requirements for admission to the medical schools have been rapidly advanced and standardized; the number of medical schools has been reduced from 166 to 104 by obliteration and combination, much to the improvement of all, and a far better class of matriculates has been secured. The courses of instruction have been lengthened and made more scientific. Each good medical school is doing more or less of research which is not confined to laboratory investigators, but is fast finding its way into hospitals. Indeed, some of our clinical men are now making most valuable contributions. Every medical man should have much of the spirit of research. It is the pabulum on which medicine feeds and without it the profession atrophies and starves. It is the glory and strength of the profession that it is not bound by dogma and pays no heed to ipse dixits. I have no sympathy with the idea that medical research should be largely relegated to special non-teaching institutions. These have their function and we rejoice in their foundation and support and hope that they may multiply, but the man who is devoid of the spirit of scientific investigation has no place in medicine as student, practitioner or teacher, and the most elaborate medical training without opportunity for scientific observation is barren. Besides, opportunities for medical discovery should be widely distributed. Science makes no provision for an aristocracy. There can be no papal bulls issued in the domain of medicine. The workers must be many, all must be free to pursue knowledge in their own way, and all must be compelled to prove their claims, for "life is short, art is long, opportunity is fleeting, experiment fallacious and judgment difficult."

In this work of self-improvement the profession has had the aid of the more intelligent law makers and administrators. In carrying out these progressive changes there has been much sacrifice of money and personal pride by many members of the profession. Large schools have willingly submitted to marked reduction in the numbers of their students and consequently in financial support. A medical education costs more in time and money than that demanded by any other profession, and the emoluments of the average practitioner have decreased as preventive medicine has become more effective. No other profession pays so heavily the great cost of eradicating the infectious diseases, but this is the function of medicine and no sacrifice should be regarded as too great. While intelligent medical men have been leading the crusade against greed, ignorance and disease, our legislative halls have been crowded with the representatives of sects, cults and charlatans demanding legal recognition. If I mistake not, herculean efforts will be made in the near future to lower the standards demanded of the medical practitioner. These endeavors have been promised aid from those who have heavy financial backing, but if we are worthy of the trust which we bear, we will not yield. We must appeal to the good sense of the people for whose welfare we labor. We must show what scientific medicine has done for the public good and point out the greater things it may do with increased opportunity. It must be admitted that in the crusade for the restriction of tuberculosis many physicians have manifested but little interest. This is shown by their slowness to employ methods of early diagnosis and consequently by their failure to recognize the disease in its curable stage, also by their unwillingness to comply with the laws of notification. It is an undeniable fact that there are many medical men who know less about hygienic measures than the more intelligent of the laity. With advancing knowledge among the masses these professional fossils will be correctly labeled and properly shelved in the local museums of antiquities.

I believe that medicine is now attracting excellent young men. It should appeal to this class. It does not point the way to great financial reward, but it offers a service unsurpassed by any other calling. The historian tells us: "For the Roman patriot the only worthy stage was the forum or the battlefield; every other pursuit was left in the hands of slaves and could not free itself from the taint of servitude." Modern medicine offers a field in which the advancement of knowledge, the improvement of health conditions and the saving of lives are the measures of success.

Preventive medicine, still in its youth, has accomplished great things. As I have stated, within the past thirty years in this country the mortality from tuberculosis has been reduced more than half and with scarlet fever and diphtheria the results have been more striking. Within the past ten years the average life has been increased four years. Great epidemics which once devastated continents are no longer known in the more intelligent parts of the world. In fact, it may be said that the death-rate is now an excellent measure of intelligence. In 1911 the death-rate in London was 15 per one thousand, while that of Moscow was 27.3. Preventive medicine is the keystone of the triumphal arch of modern civilization, and its displacement would precipitate mankind into relative barbarism. Should the health administrators of any great commercial center fail, for even a few months, to exercise the function of restricting disease, the history of the epidemics of the middle ages might be repeated. Great things have been done, but greater tasks lie before us, and their accomplishment depends on the scientific wisdom of our profession and the intelligence of the people. Without the harmonious adjustment of these forces the greatest efficiency cannot be secured. While the mortality from tuberculosis has been reduced half in the past thirty years, we must not assume that the total eradication of this disease will be accomplished in the same number of years. Only the more progressive members of the profession have taken the initiative, and only the more intelligent members of the community have responded. Intelligence and the sense of moral responsibility must grow as the work proceeds. It remains for all who have the welfare of the race at heart to plan wisely and carry forward courageously the campaign against greed, ignorance and disease.

The sanitarians of this country seem to be in harmony in regard to the general procedures to be followed. These are embodied in bills recently introduced in the legislative assemblies of a number of states. In New York an excellent bill was passed and its operation is now being inaugurated under the directorship of Dr. Biggs, whose long and effective service in the city of New York demonstrates the wisdom of his selection. I regard it as highly fortunate that the operation of this new and important law is to be directed by one so well qualified.

My own ideas are embodied in the "Amberson bill" of the Michigan legislature of 1913. Among the provisions of this bill the following may be mentioned: The state is to be divided into health districts. In each such district a health commissioner is to be appointed for a term of four years. The fitness of the commissioner is to be determined by the State Board of Health after examination. The salary of the commissioner varies with the population of the district, but in most instances would run from three to six thousand dollars. There is to be an additional appropriation for laboratory expenses and for carrying out the purposes of the act.

> It shall be the duty of the health commissioners to be vigilant in the work of disease prevention and the conservation of the public health, and to enforce all health laws of the state and health ordinances of their respective localities, together with all rules and orders of the state board of health; to collect and report to the state board of health morbidity statistics and to make a monthly report of the work done by them in narrative form to the state board of health and in such tabular form as may be prescribed by the state board of health. Copies of such reports shall be retained by each commissioner in permanent record books. They shall make such sanitary inspections and surveys of the district as may be required from time to time by the state board of health or by the city for which appointed, or by resolution of the board of supervisors of each county. They are hereby authorized and invested with the power to enter on and inspect private property at proper times in regard to the possible presence, sources or cause of disease, to establish quarantine and in connection therewith to order whatever is reasonable and necessary for the prevention and suppression of diseases; to close schools, churches, theaters, or any place of public assemblage, to forbid public gatherings in order to prevent or stay epidemics; to collect statistics concerning insanity, feeble-mindedness, tuberculosis and other infectious diseases; to inspect slaughter-houses and markets of all kinds where food is sold. They shall inspect at least once each six months and make a sanitary survey of the publicly owned buildings and institutions within their respective jurisdiction and shall keep a report thereon as part of the records of their office. They may inspect any school buildings or grounds within their jurisdiction as to sanitary conditions and shall have power to close any school when the sanitary conditions are such as to endanger or imperil the health or life of the pupils attending the same. They shall include all such sanitary inspections in their monthly reports to the state board of health. They shall at all times be subject to the orders of the state board of health in the execution of the health laws of this state and may perform any duty where required by the state board of health, or any member of said board acting for the entire board, which might be performed by said board of health or an officer thereof.

Further duties of the health commissioners are defined in the bill, and I have given only enough to show the purpose and scope of its provisions.

The successful operation of such a law would require the highest class of sanitarians. They must possess intelligence, industry and integrity. They must be devoted to their work, remembering that the Father of Medicine said: "Where love of mankind is, there also is love of art." With these qualifications I believe that such a law might be operated with great benefit to the people. Is the medical profession of this country prepared to do this work? I believe that many of the recent graduates of our best schools are fitted for this highly important function. They may need special training in the courses in public health now being inaugurated. If I mistake not, our profession will soon have wide opportunity to demonstrate its usefulness in this direction. If the public makes this demand, preventive medicine will have the opportunity to do a patriotic service which has never come to any profession at any time. With proper facilities and helpers, such commissioners might within a few years become acquainted with the conditions surrounding every permanent resident within his jurisdiction, and with properly qualified administrators of the law much might be done to abate disease, improve health, increase efficiency, eradicate the venereal diseases, stamp out vagrancy, pauperism, prostitution, alcoholism and crime. Crime is a disease due to heredity or environment, one or both. We now permit it to breed and multiply in our midst. Its causes must be determined and eliminated and its habitations must be discovered, disinfected or destroyed. We have heard too much about the rights of the individual; let us know more about his duties. Too much stress has been laid on the sacredness of private property and too little on the duty of all to contribute to the welfare of the whole. Preventive medicine has demonstrated in a practical way the force of the biblical statements that no man liveth to himself alone, and that every man is his brother's keeper. Preventive medicine is the most potent factor in the socialistic movement of the day with which every good man feels himself more or less in sympathy; besides it is at the same time the most powerful weapon against the anarchy with which some would threaten us.

If preventive medicine is to bestow on man its richest service, the time must come when every citizen will submit himself to a thorough medical examination once a year or oftener. The benefits which would result from such a service are so evident to medical men that detail is not desirable. When recognized in their early stages most of the diseases which now prevail are amenable to treatment. The early recognition of tuberculosis, cancer, diabetes, nephritis, heart disease, etc., with the elimination of the more acute infectious diseases would add something like fifteen years to the average life, besides saving much in invalidism and suffering. The ultimate goal of science is the domination of the forces of nature and their utilization in promoting the welfare of mankind. Science must discover the facts and medicine must make the application for either cure or prevention.

The local health authorities for which the bills referred to make provision must be supervised by State Boards of Health or State Commissioners. Many of our State Boards of Health are already doing much, but this is little compared with what they might do. They should be absolutely free from party dictation, should be made up of men both qualified and interested and their executive officers should be distinguished for their knowledge of sanitation. Their appropriations should be greatly increased, for health is a purchasable commodity. Pure water, pure food and even pure air cost money, but they lead to health, which is worth more than gold to both the individual and the state.

Our present national health service is doing most excellent work. It demonstrated its strength in eradicating the plague in California and the suppression of yellow fever in New Orleans. It has charge of the administration of the laws affecting the admission of immigrants, so far as their health is concerned, and it performs this service well. The Public Health Service is now investigating the pollution of certain rivers, studying trachoma in the mountains of Kentucky, pellagra in South Carolina and the spread of typhoid fever in certain districts. The Hygienic Laboratory at Washington has made valuable researches in addition to the routine work of the examinations of vaccines and serums. This bureau should be developed into a department with a member in the cabinet. The study of contagion in our midst is quite as important as anything within the range of the activities of the Departments of the Interior, Agriculture and Commerce and Labor. Our health relations with other nations concern us quite as much as our trade relations. The one thing above all others against which our doors should be shut is disease, whether it be of plant, animal or man, whether it be of body, mind or morals. The highest function of the state is not to make millionaires out of a few importers or to find profitable investments for its surplus wealth in foreign lands, but to advance to the highest degree the health, intelligence and morality of its citizens.

In each state there should be a hygienic laboratory equipped with able men supplied with facilities for the study of sanitary conditions and for the prosecution of scientific research. The Hygienic Laboratory at Washington should be developed into a great institution for research which would improve the conditions of life. The greatest asset of any nation is the health of its citizens and the people who secure this in the highest degree will dominate the earth for the dominion of the superman, when he comes, will extend from pole to pole, not by force of arms, but by example and education.

Younger members of the profession: One who is soon to be mustered out of service, on account of disability and old age, salutes you. An old soldier who has served in the ranks nearly forty years, steps from his decimated regiment, lifts his cap and cheers you, as you pass by in your new dress and armed with weapons of greater efficiency than was known when he enlisted. The cause is the liberation of the race from the bonds of superstition and ignorance and it is a glorious one. The contest began before the genus *homo sapiens* came into existence. Countless generations have served their time, some well, some ill, and have passed into oblivion, but their partial victories have made you stronger and placed on you a greater responsibility. Your intelligence is greater, your judgment is sounder and your effectiveness has been increased. Where the past has failed or only partially succeeded, your success will be greater. But the battlements of ignorance still bristle with heavy-fire guns. Only a few of the outposts of the enemy have been captured. It is for you to do and then like all your predecessors to die. You stand to-day within the firing-line. Go on courageously and when eons of the future have become the past, the superman, born out of the struggles of his predecessors, will demolish the last citadel of ignorance and vice, and firmly plant on the highest peak of the mountain of knowledge the flag of human progress and when the silken banner shall unfold, there shall appear on it this legend:

Pro gloria omnium nationum et hominum honore.

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AEROPHAGY [*]

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DETROIT

Belching of gas is the most common symptom accompanying gastric disease. We find it present in nearly every organic and functional affection of the digestive tract. The several gastric neuroses always have eructations as their one prominent symptom. These eructated gases were formerly supposed to be the result of fermentation or putrefaction; we now know that in the majority of instances the eructations consist in the main of swallowed air. This is easily understood when we consider what really takes place.

When patients are suffering from a disease of the stomach, the proteins or carbohydrates are apt to decompose, producing some little gas. The pressure induced by this gas is readily relieved by belching. The patient remembers the great relief thus produced, and when he has a similar attack of gastric weight, pressure, distention or pain, his first thought is to get relief by raising the gas from the stomach. An effort is required, and in the effort the patient unconsciously swallows air, allowing it to come back quickly after each expulsive contraction of the stomach, and thus he becomes an aerophagic. The spasmodic swallowing of air, followed by eructations, has been termed "aerophagy," and it accompanies more or less every disease of the alimentary tract. It is seldom found by itself, although there are cases of primary aerophagy.

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Neurotic persons are known to have a habit of eating or swallowing air (aerophagy). At one time it was supposed to be pathognomonic of a neurosis, and when a case was encountered the physician would look for other evidence of hysteria or neurasthenia. Aerophagy is present in many neuroses and it is also found as an accompaniment in several gastro-intestinal diseases.

Physiologically, a certain quantity of air is carried into the stomach in the act of eating and drinking and when swallowing saliva. It is only when the quantity becomes excessive that the process assumes pathologic significance. Not infrequently, when large quantities of air are swallowed, a cardiospasm occurs, inducing many disagreeable symptoms, because the air cannot return through the cardia.

The persistent swallowing of gum-chewers leads to aerophagy. This might also occur in patients who are continually swallowing mucus from a retropharyngeal catarrh. In the majority of cases, however, the patient experiences discomfort after meals which he attributes to gas, and in his effort to obtain relief forces air directly into the esophagus so that he may belch. These patients unconsciously become air-swallowers.

Notwithstanding the fact that aerophagy is common, careful study and observation are required for diagnosis. Most patients ridicule the idea that they are air-swallowers, and the physician who would accuse them of it before he is quite sure he can prove it to them would show lack of tact. Many patients, however, who complain of pressure after meals with eructations of gas, are neurotics.

In every case of persistent belching, the clinician's attention must be called to the possibility of aerophagy. This is especially true if the patient can belch seven or eight times in succession, and particularly if he can do this when he pleases.

Such patients always wear their clothing loose, to give the abdominal wall sufficient room. The eructations may begin at any moment and continue for several minutes or hours. At first the belching is slow and practically noiseless, but it soon becomes more rapid and loud, so that not only the patient but also the whole household is disturbed. By close observation the physician will notice that the patient collects a little saliva in his mouth, slightly flexes the head on the thorax, closes his mouth and swallows. By this procedure the air is forced into the esophagus, producing a sound which leads the patient to believe that the act is an eructation, while just the opposite is the case. On opening the mouth the air is noisily belched, and then swallowing and eructation follow closely on each other almost continuously. At times it requires eight or ten swallowings of air to induce one good eructation.

Attacks of aerophagy usually occur after meals, and may continue from fifteen to thirty minutes. The thyroid cartilage, it may be observed, rises and falls alternately as in deglutition. Any excitement or shock may induce an attack.

In cases of aerophagy, fermentation or putrefaction of the gastric contents need not be considered. When the gas has been analyzed it has been found to consist simply of swallowed air that has been thrown off. This finding is confirmed by examination of the gastric contents removed by the stomach-tube.

The entering air does not always pass to the stomach; not infrequently it remains in the esophagus and is from there ejected through the mouth. Occasionally a large quantity of thin, glairy mucus is expelled at the same time.

Sometimes the swallowed air is retained and the stomach assumes the shape of a balloon. Grave consequences may result from this accumulation. The persistent distention may so interfere with the circulation of the blood as to inhibit gastric secretion, and a paretic condition may ensue. Pain soon appears, all the symptoms become worse, and the whole process results in an acute dilatation of the stomach. This condition may be serious when it occurs following major surgical operations, particularly on the stomach. This is comparatively rare, because patients are usually able to belch the air.

Aerophagic patients are often treated for various forms of indigestion without benefit, because the cause of the difficulty is overlooked. They usually regurgitate part of their food and suffer from malnutrition. Their mental condition is disturbed and their nervous manifestations are manifold.

At times the air passes through the pylorus, causing a distention of the intestine. It passes quickly through the small intestine and remains in the colon. Part of it is absorbed or, if not too abundant, all of it will be taken up and eliminated through the lungs.

During an acute aerophagic attack, patients may suffer from dyspnea, tachycardia and cyanosis. These are instantly relieved by introducing the stomach-tube, which allows the air to escape. The distention of the stomach with air pushes the apex of the heart upward and to the left. This pressure on the ventricles rotates the heart on its axis and distorts the great vessels at its base. The distended stomach or esophagus may disturb the heart in a reflex manner because the common innervation of these organs is through the vagi. Stimulation of the vagi causes a slowing of the heart. These factors often produce cardiac arhythmias, which become apparent to the patient by periods of different pulse-rate and irregularities, causing them considerable worry and anxiety.

Aerophagy always intensifies preexisting disease conditions. As a complication of gastric ulcer it may cause hemorrhage. It is one of the main factors in postoperative dilatation of the stomach. The clinician must always make sure that patients suffering from gastro-intestinal diseases with gaseous eructations are not aerophagics.

It is of the utmost importance that an accurate diagnosis be made, because the affection is easily remedied. The Roentgen fluoroscope will always show the rise and fall of the thyroid cartilage. This is helpful when one is not sure of his diagnosis.

The examination of the stomach contents in all aerophagics shows the presence of bile. A positive reaction for bile, with eructations, is a pathognomonic sign. The eructation of the air acts as a siphon and frequently draws the bile from the duodenum backward into the stomach. The finding of bile in the gastric contents is decisive. I usually depend on this reaction.

In the treatment of aerophagy, it is necessary to impress the patient with the way he is distending his stomach with air. This can easily be done by telling him to belch and, while this is going on, asking him to keep his mouth open. While the mouth is open he cannot swallow air and the eructations quickly cease. At this stage it is wise to explain to the patient that he has been swallowing air instead of emptying the stomach of gas. In order to keep the mouth open a cork may be placed between the teeth and held there. In this way the air is prevented from entering the esophagus. Then again, in order to keep the thyroid cartilage from rising, one may tie a ribbon moderately tight around the neck; this not only is a direct restraint but also serves as a reminder to the patient.

Hyperalimentation is known to have a salutary effect on weakened patients. Methodic treatment by sounds introduced into the esophagus is sometimes followed by beneficial results. The underlying nervous condition will in many cases yield to electricity, change of climate or hydrotherapeutics. The medicinal agents indicated in this condition consist of the bromides, belladonna, chloroform-water and preparations of valerian.

In cases of aerophagy accompanied by severe pain, opium or some of its preparations are indicated. Suppositories of opium and belladonna serve a good purpose. At the same time the disease which aerophagy accompanies must receive careful attention. The cases of chronic gastritis receive lavage and the ulcer cases their treatments. The neuroses require the most careful consideration. Alkalies and acids are necessary as the functional examination of the gastric contents may indicate. When the air remains in the stomach and cannot be expelled, the stomach-tube should always be employed. As a rule, the psychic treatment brings about complete recovery from the aerophagy itself.

CONCLUSIONS

1. Continued belching of gas for a considerable length of time indicates aerophagy.
2. All eructated gas consists in the main of atmospheric air swallowed in attempting to belch.
3. Aerophagy accompanies many neuroses and is a frequent symptom of functional and organic disease of the gastro-intestinal tract.
4. The presence of bile in the stomach content with eructations is suggestive of aerophagy.

Kresge Building.

Fatigue.—Work performed by any of the body-cells produces waste-products and other changes in the cells. Up to a certain limit, work, with the resulting changes in the cells, is beneficial and improves the physical condition of the cells, but when the work is excessive, too prolonged, or too fast, waste products begin to accumulate, the cells become exhausted, the proper changes fail, and if the cells are not properly rested, damage results. If the work is continued without proper rest early breaking down and failure of the individual to perform his task are the final results.—B. S. Warren in *Pub. Health Rep.*

MEDICAL VERSUS SURGICAL TREATMENT OF PYLORIC STENOSIS IN INFANCY*

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Nearly all that we know of pyloric stenosis in infancy has been contributed since 1897. It seems surprising, in view of the definiteness of the clinical picture and the frequency of this condition as shown by the number of reported cases since that time, that it was so long unrecognized; even now it can hardly be called common, although almost every one in active public or private practice among infants is likely to meet one or more cases each year.

My own experience with pyloric stenosis of infancy includes fifty-seven cases, of which number eighteen were seen in private practice and the remaining thirty-nine were inmates of the Babies' Hospital. The steadily increasing number of cases seen would seem to indicate that we now often recognize this condition where formerly it was overlooked.

Pyloric stenosis in infancy presents many interesting and curious features. In the first place, it occurs nearly always in those who are breast-fed. In one of my cases the previous feeding is not given; of the remaining 56, 52 were breast-fed; of these, 40 had nothing else, while 12 had some breast-feeding and some bottle-feeding; only 4 had nothing but the bottle. Bad feeding can hardly be invoked as a cause of this condition — a point of considerable importance in distinguishing it from gastric indigestion, which its symptoms most frequently resemble.

The predominance of the male sex has been noted by all writers. Of 55 cases of my own in which the sex was noted, there were 49 males and but 6 females. No reasonable explanation for this difference has yet been suggested.

SYMPTOMS

The condition is frequently spoken of as congenital stenosis of the pylorus; yet it is very exceptional for the symptoms to be seen soon after birth or even in the first week. I have seen several infants with persistent, forcible vomiting beginning on the first day of life and with other symptoms which were suggestive of pyloric stenosis; but not one of them proved to be examples of this condition. Such an onset speaks strongly against this diagnosis. In four-fifths of my cases the first definite symptoms began in the third, fourth or fifth week and in only two during the first week of life.

In the great majority of the patients the symptoms begin abruptly. The mother can frequently give not only the day, but also the hour when the symptoms began. An abrupt onset of forcible vomiting with no history of previous vomiting was present in 30 of 57, or over half the cases. In 9 of the remainder there was an abrupt onset of forcible vomiting, though occasional vomiting of the ordinary type had been present for some time before.

This abrupt development of symptoms, coming in most patients some weeks after birth, admits of only one explanation: that in the production of symptoms at least, pyloric spasm plays a most important part.

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Again, the complete recovery, or to speak more exactly, the disappearance of all symptoms, which occurs in a certain proportion of instances in the course of a few weeks, points in the same direction. On the other hand, when the stomach has been examined at necropsy, there has, I think, been invariably found marked hypertrophy of the pylorus, principally involving the circular muscular layer, whose fibers are increased not only in size but also in number. It is to this hypertrophy, say the pathologists, that the stenosis is chiefly due. The symptoms according to this view have an organic rather than a functional basis.

It is difficult to reconcile satisfactorily the clinical symptoms and the pathologic findings with either one of these views alone, although one or the other view has been adopted by different writers in support of a method of treatment. Some have sought to escape the difficulties by dividing cases into two groups, hypertrophic and purely spasmodic cases. A study of the cases reported by different writers shows that they do not at all agree with regard to the symptoms on which a case is placed in one or the other category. Some would make the presence or absence of a palpable tumor the differential point, while others contend that a tumor is usually found when the patient is carefully examined by an experienced observer in cases which others would class as spasmodic. Nor can the fact of recovery without operation be considered diagnostic; we know that patients having identical symptoms with those that have shown hypertrophy at necropsy or operation do recover and, so far as one can judge by symptoms, they recover completely.

On the other hand, if spasm were in a large proportion of the cases the only factor, why should recovery be, as we find it, a matter of weeks, often of months? A temporary pyloric spasm undoubtedly occurs in many conditions, as in the projectile vomiting of cerebral disease, *but definite, persistent spasm of the pylorus without hypertrophy* is, I believe, yet to be proved. At necropsy, hypertrophy has been in my experience invariably present. It was found in every one of twenty-six necropsies on this condition made at the Babies' Hospital, the description in the record being almost always as follows: A firm, hard, cartilaginous tumor was present. It would be well if the term "pylorospasm," as defining a group of these cases, were dropped from our nomenclature. Its use as indicating the sole pathologic condition present has led to much confusion of thought on the subject, especially regarding the indications for operation. It is, I believe, responsible for neglect of operation when operation might have saved life.

There has been too much discussion of terms in this disease. No two men will agree in the classification of cases seen at the bedside, for no sharp division into spasmodic and hypertrophic types is possible. The real question is whether or not there exists an obstruction sufficient to endanger the child's life, and how it may best be relieved.

A better division is into mild and severe cases. The two elements, the spasmodic and the hypertrophic, are probably present in every case, sometimes one and sometimes the other predominating. It is my own view that the essential difference between the groups of cases is one of degree rather than a difference in kind, but the same elements are present in the two.

Many points in the pathology of pyloric stenosis are still very obscure, and we find it hard to believe that the spasm is the cause of the hypertrophy, and difficult to explain why it is, if the essential condition is hypertrophy, that symptoms are so infrequently seen during the first ten days or two weeks of life.

When we come to the clinical aspects of the disease, however, we find no such divergence of views. The clinical picture is distinct and with careful observation easily recognized in the great majority of cases. In a typical case an infant, usually breast-fed, who has previously shown few or no signs of disturbance of digestion, begins to vomit persistently and forcibly. These symptoms have their most frequent beginning in the third or fourth week of life, and in most cases the onset is abrupt and without assignable cause. To the forcible vomiting are added marked constipation, steady loss in weight and all the symptoms belonging to failing nutrition. Careful examination reveals definite gastric peristaltic waves and in most cases a palpable tumor in the pyloric region about the size of a peanut. In a certain number of cases the vomiting becomes less and less frequent, all the symptoms gradually abate and the child very slowly regains its lost weight. This may require only a few weeks, but more often it is several months. At other times the vomiting is persistent and uncontrollable, the loss of weight is progressive, and unless surgical relief is given, the child dies of failing nutrition.

DIAGNOSIS

Since the question of exact diagnosis and early diagnosis is so important, the essential diagnostic symptoms may be advantageously considered in greater detail. The most constant and usually the earliest symptom is vomiting. So characteristic is it in these cases, as to the time of its occurrence, the manner in which it takes place and the matter vomited, that one can often make his diagnosis from this symptom alone. It differs markedly from the usual vomiting seen in young babies, in that it occurs soon after nursing, often while the child is still at the breast. It is forcible and projectile; the food is fairly shot out of the mouth, sometimes for a distance of 4 or 5 feet. It is in large amounts, usually the entire contents of the stomach, and generally it is repeated after each feeding. If the vomiting is infrequent and does not occur after every feeding, the amount ejected at one time is often much larger than the amount taken at the last feeding. The frequent regurgitation of small amounts of food is seldom seen. The vomiting is unaccompanied by fever or pain, and in the beginning and usually for some time there is no impairment of appetite. Immediately after emptying the stomach the child may seem so hungry as to take a full feeding. Finally, the vomiting is persistent. Nearly all the changes of food have a surprising effect in temporarily lessening the vomiting, but in a day or two it returns and is as severe as ever.

The waves of gastric peristalsis have been so often described that a repetition is hardly necessary. Intestinal peristalsis may be mistaken for them, though very rarely indeed. In the great majority of cases they are typical, unmistakable and readily made out, though in some they may not be observed unless the patient can be frequently seen and closely watched under the most favorable conditions, the most important one being that observations are made immediately after filling the stomach. Sometimes in hospital patients, though both the doctors and nurses were on the watch for waves, it has been a day or even two days before they were observed. I believe visible gastric peristalsis to be the most important symptom for diagnosis and I should hardly be willing to make a diagnosis without it.

While a palpable tumor cannot be considered essential to the diagnosis, it will usually be found by an experienced and careful observer under favorable conditions. But not always: I have seen men, experienced in these cases, unable to feel a tumor when one was afterward shown to be present, and then again, on the other hand, I have known men to be quite sure that they felt a tumor when none could be demonstrated at necropsy or operation. The tumor is more distinct in the most severe cases and where the obstruction is complete. It may persist for weeks or even months in cases in which recovery occurs without operation. In two of my patients who recovered, it was noted as late as the sixth month of the child's life; the patients were seen at 4½ and 5 years, respectively, and both were well. The tumor is usually more evident just before or during the act of vomiting, and it may not be easily felt at other times. It usually hardens during active peristalsis and may be difficult to feel at other times. It may then rise and meet the hand lightly pressed on the abdomen, somewhat as the spleen may do when forced down by full inspiration. It may be displaced from its usual position and so missed. In my opinion, too much has been made of this symptom not only in classifying these cases, but also in deciding the treatment to be followed. The presence of a tumor, because so frequent, is an important symptom in diagnosis, but the decision as to operation should not rest on finding or not finding it, but rather on how much obstruction is present. While the tumor is naturally more prominent when much hypertrophy exists, in the absence of a palpable tumor we are not justified in deciding that only spasm exists, for operation in these cases has often disclosed a typical tumor.

One of the most important means of determining not only the fact of pyloric obstruction, but also its degree, is by measuring the amount of gastric retention. The child is fed a measured quantity and the stomach is emptied by aspiration three hours after this. The ordinary apparatus used for stomach washing will hardly answer the purpose. The little apparatus suggested by Hess for aspirating the duodenum is much better. A food not coagulating in the stomach in large masses must be given, that is, boiled milk diluted at least twice with barley water or condensed milk, or simply by a barley gruel. If, for example, three hours after feeding, the stomach is found to contain nearly as much as the quantity taken or more than this, or if, after no food has been given all night, the following morning 4 or 5 ounces can be removed, as in a case I saw recently, one may be sure that obstruction exists. A determination of the amount of retention is of especial value in the rather rare cases in which vomiting occurs only infrequently. Aspiration is also useful during the progress of the case medically treated to determine just how well a given food is being taken care of.

As a means of deciding the fact of obstruction and its degree, aspiration of the stomach is in my opinion much more valuable than the Roentgen ray, besides being much simpler and always ready at hand. The Roentgen findings may even be quite misleading. Bismuth may pass out of the stomach, as may food, through an exceedingly narrow opening, and yet the symptoms may be of an aggravated type. It can show at most only the rate of discharge from the stomach, and aspiration can show that quite as well and much easier.

Constipation, as uniformly present, is mechanical and depends only on the absence of food from the intestine. In the severe cases nothing comes through, and the stools resemble meconium. In most cases something does pass and we have simply very small stools which may be fecal. More than once I have been amazed to find at necropsy a pylorus which admitted only a fine probe and yet during life fairly good-sized fecal stools had been present.

Other symptoms are always present in this condition though they are not diagnostic; there is progressive wasting which often amounts to 1 or 2 ounces a day. Its rapidity depends on the completeness of the obstruction. The appetite is often unimpaired until the prostration becomes considerable. Muscular weakness and anemia are proportionate to the loss in weight. There is usually a marked reduction in the quantity of urine, and where there is a complete obstruction there may be anuria for twenty-four hours or more. Under such circumstances I have seen a diagnosis of a renal condition made, the vomiting being regarded as a symptom of uremia.

THE QUESTION OF TREATMENT

Given a fairly definite case of pyloric stenosis in an infant a few weeks old, what treatment shall be advised? At present the profession is by no means in agreement regarding this point. Even among those who have had a large experience with pyloric stenosis a wide divergence of view exists. Physicians have reported quite large series of cases treated by medical measures alone with so low a mortality as to lead to the inference that nearly all these patients recover if properly treated, without resort to surgery. Thus, Robert Hutchison in England reports, in twenty cases treated in private practice, eighteen recoveries. German writers, Heubner, Bendix, Starck and others, also give about the same proportion of recoveries in series of cases treated without operation.

On the other hand, quite an opposite view is taken by surgeons. They consider the disease a surgical one and urge that the patient be turned over to them for operation as soon as the diagnosis is made. They argue that medical treatment in a very large number, probably in most instances, is only a waste of time and that the life of the patient is often jeopardized because the surgeon does not see the case until the general condition has become very grave, while with earlier operation nearly all could be saved. In a recent publication Richter of Chicago reports twenty-two operations with but four deaths.

Pyloric stenosis in infancy is accredited with a general mortality of about 50 per cent. if we accept the reports of those who have written most widely on the subject. Of the 57 cases in my series there were 26 recoveries and 31 deaths, a mortality of 55 per cent. There were operated on 28 patients, with 14 deaths; treated medically 29 patients, with 17 deaths. It should be remembered, however, that three-fourths of these were hospital patients and that every case of pyloric stenosis admitted was included, though a considerable number were in so wretched a condition as to be hopeless, and four were practically *moribund*.

The very bad cases were treated medically or operated on in about equal numbers.

To what is this difference of opinion due? Does it mean that with proper medical treatment surgery is unnecessary, or does it mean that different conditions have been considered by the different writers? In looking over case-reports one is unable to see that there is any very great difference of opinion in regard to the symptoms essential for diagnosis. These are pretty well established, and there is very general agreement among both physicians and surgeons.

Some writers take the ground that cases of pylorospasm do not require operation, but that it may be necessary in cases of hypertrophic stenosis. If a child recovers without operation it is evident, they say, that the condition was one of pylorospasm only. This argument is not very convincing. I have already stated my belief that no sharp division of the cases into spasmodic and hypertrophic is possible either on pathologic or on clinical grounds, and that a better practical division is into mild and severe types. In the former, improvement frequently begins in a few days when proper treatment is instituted, and recovery may follow in a few weeks. In the latter also there is a strong tendency to recover from the symptoms of obstruction, and I believe from the pathologic condition also; but the course is so protracted that, owing to the tender age and feeble resistance of these patients, not a few succumb, although to use a Hibernianism, they would all get well if they lived long enough.

Against operation are the following considerations: A large number recover without it, and the essential surgical risks of operation, even in the best hands, are considerable.

The crux of the whole question between medical and surgical treatment of pyloric stenosis seems to me to be: Are the symptoms and conditions such as to make it probable that the patient will or will not live long enough for the pathologic condition to subside? There are medical risks and there are surgical risks; in the individual case one must decide which are greater; the two must be carefully weighed one over against the other.

MEDICAL RISKS

The medical risks in an infant with pyloric stenosis are not to be ignored; they are, I think, not sufficiently considered.

First, there may be death from acute inanition; this in the most acute cases occurs quite rapidly. I have seen a number of cases with such prostration and so rapid a loss in weight that delay in operation even of a few days would, I believe, have cost the child its life.

Second, there is the danger of marasmus or slow inanition from the prolonged duration of the symptoms. While this risk is not so great in private practice, it exists, and in hospital practice and also among patients in poor surroundings it is very serious. The problem is one of infant nutrition with a very heavy handicap, and the difficulties are often great, even when all possible resources are at our command. There are considerable risks in waiting day after day and sometimes week after week when a child is barely holding his weight or losing but 1 or 2 ounces a week. The physician frequently does not realize on what thin ice he is skating, and how near the danger-line he is. Especially is this likely to be the case if the vomiting has become infrequent and fecal stools are present. It is hard to estimate how much resistance these little patients have. To allow the weight to fall gradually from 8 pounds to 7, to 6, or even lower, is to take great chances; and although possibly the majority of the patients may recover, every now and then an unexpected death occurs without warning.

Third, there is the risk of intercurrent disease developing while a child is in a greatly enfeebled condition. This is a very important consideration in a hospital where treatment must usually be continued from six to ten weeks, and it has some weight even in private practice.

Fourth, there is the risk of sudden death, which may come without any assignable cause. It has happened two or three times in my experience that children who seemed to be doing fairly well have collapsed suddenly and died in a few hours, the necropsy giving no explanation. This has occurred when the food taken seemed adequate so far as its caloric value was concerned, when the weight was stationary or showed only an insignificant loss and when the vomiting had practically ceased.

One other question deserves some consideration in this connection, namely, if these patients get well without operation do they recover completely or does a lesion remain which may subsequently give trouble?

During the last few weeks I have either seen personally or had reliable reports from seven patients who were under my observation during infancy with typical pyloric stenosis and who recovered without operation. One, a boy of 9, has had no gastric symptoms since he recovered from his attack, and is the most robust member of a family of four children. A second is now 7 years old; he had to be fed carefully during the first few years, but for two years past he has "eaten everything" and has had no digestive symptoms. A third, whose active symptoms lasted until he was 8 months old, whose weight at 7 months was but 7¼ pounds, and whose pyloric tumor was noted as late as the seventh month, was, at 5¼ years, a husky boy weighing 60 pounds. There had been no gastric symptoms since he left the hospital at 9 months of age. The same was true of three others seen, whose ages were 4½, 4¼ and 3½ years, respectively. None had had gastric symptoms since infancy; all were well developed, and two were robust. A report from another child, 17 months old, tells that his weight was 30 pounds and that he had been absolutely free from symptoms since he left the hospital at the age of 3½ months. These include all the cases of recovery from pyloric stenosis without operation which I have been able to follow. In no instance was there a persistence of symptoms into childhood. After these children recovered from their malnutrition their subsequent progress and development was quite average. The period of malnutrition lasted in most of them until they were nearly a year old and in some it persisted well into the second year.

Is there any evidence that subsequent trouble does occur in later childhood in these patients? We know that hypertrophy disappears slowly, and we have abundant proof that the cessation of symptoms does not mean that hypertrophy no longer exists. Howland found a typical hypertrophic tumor still present in a child who died of acute diarrhea four months after recovery from symptoms of pyloric stenosis. A patient operated on by Downes at the Babies' Hospital, died of diphtheria six months after gastro-enterostomy; hypertrophy of the pylorus still existed. Morse also has reported a similar case; the child recovered from operation (gastro-enterostomy), but died of acute disease six and one-half months later; the necropsy showed that the pyloric tumor and the obstruction persisted.

Pyloric stenosis in infancy was long overlooked, and possibly, as Graham suggests, we are still overlooking pyloric stenosis of later childhood. He reports a case of pyloric stenosis in a child of 6½ years and cites many others from literature which were proved by necropsy. How often these cases occur, or in what proportion of the patients with pyloric stenosis in infancy these late symptoms follow, we are as yet unable to say. Evidence that they suffered from symptoms of pyloric stenosis in infancy is wanting. I have seen but one case of pyloric stenosis in an older child, a girl of 4½ years; but there was no history of protracted vomiting in infancy, and definite gastric symptoms did not begin until the patient was 3 years old.

A connection between the pyloric stenosis of childhood and that of infancy has been assumed. It is yet to be established that they have the same pathologic basis. The final word on this subject has not yet been spoken, and it may be that further experience may cause us to revise our opinion regarding the ultimate outcome of the cases of pyloric stenosis in which recovery occurs without operation. At present the evidence is that patients who get well without operation recover completely.

SURGICAL RISKS

The surgical risks in operations for pyloric stenosis are partly essential and partly accidental. The essential risks are those of shock, of non-union because of the child's poor nutrition, and the danger of exhaustion owing to the fact that the difficulties of feeding have not been altogether removed by the operation. These dangers exist in every case no matter how experienced the surgeon. Of much greater importance are the accidental risks largely due to faulty technic; these are of course greatly lessened by experience on the part of the operator. Then there are the risks of hemorrhage, of leakage, of obstruction, of infection and other accidents which may follow any abdominal operation. On the whole, it is my belief that the medical risks, particularly in hospital patients, have not been sufficiently considered, and that the surgical risks have been exaggerated. With an operator experienced in these cases and a patient in fair condition, the operative risk is much less than one would anticipate. It is to me a constant surprise to see in these patients how small is the amount of shock of an abdominal operation which rarely lasts less than forty or forty-five minutes. The younger the infants the less the shock appears to be, which perhaps is not to be wondered at when we remember what prolonged operations can be done on a new-born infant with little or no shock.

In private practice, if the best environment, good nursing and proper medical attention can be commanded, I believe that the risks of the medical treatment are small and that very many patients will recover without operation. But there will, I believe, always be a certain number of patients for whom surgical intervention will be required. The favorable conditions such as I have mentioned in private practice can be obtained for only a small proportion of the patients with pyloris stenosis. For the others, if the symptoms are severe, I think early operation offers more chances of recovery. Even if the surgical risks are considerable they are short, while the medical risks are prolonged and the dangers multiply with the duration of the symptoms.

An early diagnosis adds much to the chances of success by any method of treatment. In some cases the symptoms have lasted so long and the condition is so critical in consequence of the rapid loss in weight that immediate operation should be advised as offering the only chance of recovery. Under other circumstances every child should have the benefit of a fair trial with medical treatment. The duration of this in hospital practice will depend on the conditions present. If the symptoms are severe, a day or two may suffice; if less acute, a delay of a week or ten days may be permitted. Operation should be done not because a case is classed as spasmodic or as hypertrophic, but because mechanical obstruction of a dangerous degree exists, whatever its suspected nature.

The indications for operative interference are (1) no diminution of the vomiting or the gastric peristalsis by stomach washing and diet; (2) a steady loss of weight of from 1 to 2 ounces a day; (3) marked gastric retention, and (4) absence of fecal stools. The presence of a tumor I do not regard as essential.

My early personal experience led me strongly to favor the medical treatment of these cases. I was greatly influenced by two or three very conspicuous successes in patients treated without operation, and also by the results of the first seven cases in which I saw operation done, five of the seven having been fatal.

Increased experience, however, has shown that the average case medically treated, unless it shows improvement almost at once, is likely to run a very prolonged course even though the child may ultimately recover. From six to twelve weeks of continuous treatment has usually been found necessary in the cases I have seen. This is in marked contrast to the rapid improvement which has taken place in all the children who have recovered after operation.

In looking over the histories of the patients observed during the past six years, I find that in a constantly increasing number I have advised early surgical interference. My greatest regret in this review is that operation was delayed in so many and in some not done at all. In this connection it is interesting to note the length of life after admission to the hospital of patients not operated on. In fourteen such cases it was as follows: 69 days; 44 days; 24 days; 22 days; 17 days (two patients); 13 days; 10 days; 9 days; 6 days; 5 days; 3 days, and two moribund patients. I feel sure that with our present experience a very considerable number of these patients might have been saved. No doubt the technical skill which the surgeons have acquired in the operation has contributed much to these later results, but our experience in the management of the patients after operation has also been a factor.

The postoperative treatment is very important. Emphasis should be laid on four points: hypodermoclysis, feeding, castor oil and posture.

Hypodermoclysis is useful immediately before or after operation as a means of introducing water into the body. It is greatly to be preferred to the Murphy drip. I have employed a normal saline solution with 4 per cent. dextrose; of this from 100 to 200 c.c. are slowly introduced either between the shoulders or into the abdominal walls.

In feeding, breast-milk is indispensable. We begin food as soon as the child has fairly recovered from his anesthetic, or about four hours after operation, giving 2 teaspoonfuls of breast-milk every two hours, alternating this with 2 teaspoonfuls of boiled water. On the following day the interval is made three hours, and the milk and water are each increased to ½ ounce. At the end of forty-eight hours, 1 ounce of breast-milk is given every three hours alternating with 1 ounce of water. By the end of a week the child is usually taking from 2 to 3 ounces of pumped breast-milk every three hours alternating with boiled water. By the tenth or twelfth day in most cases the child is put to the breast, but the amount of milk allowed is limited for the next week or two.

A teaspoonful of castor oil is administered at the end of thirty-six hours and is usually followed by free evacuation from the bowels, which in many cases have not been freely moved up to that time.

The child's bed is inclined at an angle of about 135 degrees or more, the head being raised. This posture facilitates the expulsion of gas from the stomach and greatly diminishes the chances of vomiting. The child is usually kept in this position for four or five days.

CHOICE OF TREATMENT

Whether in a given case we shall decide in favor of operation or medical treatment will then depend largely on the severity of the symptoms and the conditions under which the child is seen. To subject every infant with pyloric stenosis to so serious an operation as laparotomy for a condition in which at a low estimate 50 per cent. recover without it, seems hardly justifiable. I believe it to be a mistake to turn every case over to the surgeon as soon as the diagnosis is made, as some would have us do. On the other hand, the position taken by Hutchison, that "operation is never under any circumstances justified" in these cases is, I believe, untenable. I do not think that the physician realizes how well these patients do surgically, or that the surgeon appreciates how many of them recover when treated medically.

Given an early diagnosis, a patient in private practice under conditions which make the best medical treatment possible, operation may not in most cases be required; but in hospital practice, in cases seen late, in those with the most acute symptoms who are losing rapidly, and when circumstances do not admit of the best medical treatment, there is no question in my mind but that immediate resort to surgery offers a better chance of recovery. Again, to persist with medical treatment week after week when forcible vomiting and marked peristalsis are either continually present or keep recurring, when the weight shows only a slight loss, seems to me to be incurring far greater risks with the child than those of operation.

The medical treatment for patients not operated on consists in careful feeding and stomach-washing. The gastric lavage should be practiced twice a day; it serves the purpose of emptying the stomach thoroughly of mucus and fermented food; the water should be used warmer than usual, that is, up to 112 F. If it can be secured, breast-milk is the preferable food, but one not rich in fat is essential. The common practice of weaning as soon as symptoms develop is most unwise. In default of breast-milk a modified milk mixture low in fat should be employed.

With respect to quantities and intervals of feeding, cases respond differently. We have usually depended on from 1 to 3 ounces at three- or four-hour intervals, water being given in small quantities between feedings. There are seen, however, some children who seem to do better on much smaller quantities, that is, ½ ounce every hour, especially if the food is breast-milk. In greatly prostrated patients hypodermoclysis may be used twice a day as described in the postoperative treatment. Rectal feeding is little assistance except for a very short time. The bowels are moved readily by an enema, and the rectum does not discriminate between those things which are to be retained and those which are to be expelled. At most, it is of assistance only for a day or two. Drugs I believe to be of little or no value, nor can I say more for local applications of heat over the epigastrium as advised by many.

Every case of pyloric stenosis medically treated must be very closely watched; daily weights should be taken, as these children have a way of slipping away unless the most careful observations are made.

Aspiration of the stomach to determine the degree and rate of emptying is of much assistance in deciding the frequency with which these children should be fed and the amount of food offered at one time. Its value is not appreciated.

14 West Fifty-Fifth Street.

PYLORIC OBSTRUCTION IN INFANTS

A REPORT OF TWENTY-TWO PERSONAL CASES WITH OPERATION *

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The intention of this paper is to record as accurately as possible the results in the twenty-two cases of pyloric obstruction in infants which have come under my care. In order to make the report complete, it will be necessary to detail the symptoms for which relief was sought, together with the physical signs leading to the correct diagnosis. Furthermore, the findings at operation and necropsy will be mentioned, for a clear understanding of the pathologic condition present is essential in order that those who are not familiar with the disease may draw correct conclusions. Finally, the operative procedure adopted will be discussed and a critical analysis made of the results obtained.

Of the 22 patients, 17 were males and 5 females; 18 were breast-fed entirely; 2 part breast-fed and part bottle-fed, and 2 bottle-fed; in 14 cases the patient was the first baby; in 4, the second; in 2, the third, and in 2, the fourth.

The symptoms appeared from three days to seven weeks after birth, average time three and one-half weeks. In every case vomiting was the first symptom to be noted, though in one or two instances the mothers recalled that a day or so before the vomiting began there was a loss of appetite, and in one case it had been difficult to get the baby to take its feedings

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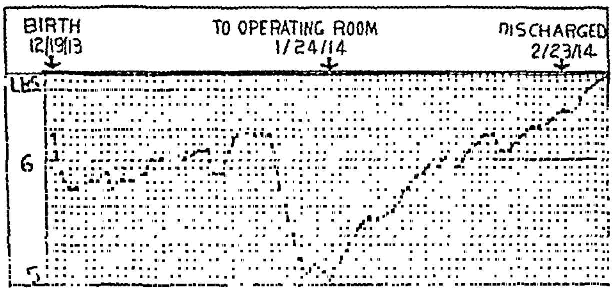
* Read before the Academy of Medicine, April 16, 1914.

properly from birth. The latter observation is unusual, for as a rule these babies have nursed too freely, taking large quantities at a time. This tendency to overdistend the stomach, with its resulting spasmodic contraction, is considered by some observers as of etiologic significance. The vomiting was projectile and usually occurred shortly after each feeding; in a few cases, however, it occurred at intervals of several hours and was probably the accumulation of a number of feedings. The vomitus was frequently examined for bile, but none was found. Constipation was marked in every case. The first colon irrigation, after admission to the hospital, often brought away small amounts of fecal matter, but those given later on returned clear. The urine was scant or absent. A marked loss of weight immediately followed the onset of vomiting, and in one (Case 6), amounted to 2 pounds in one week. Depression varying in degree from moderate apathy to profound shock was present in all the cases. This condition is the danger-signal, and the first suggestion of it should serve as a warning that the time for radical measures has arrived. One of our patients (Case 10) admitted to the hospital at 6 p. m., examined by me, and the diagnosis of true stenosis concurred in, was somewhat apathetic, but seemed in fairly good condition and it was thought that the operation could with safety be postponed until the following morning. At 6 a. m., twelve hours after admission, the child suddenly became markedly depressed. A state of profound shock supervened, and when I saw the baby at 8:15 a. m., the condition was practically hopeless. Hypodermoclysis and stimulation had been resorted to, with little or no improvement. With a full realization of the very slight chance offered by any method of treatment at this time, a rapid posterior gastro-enterostomy was done, but the condition was not improved, even though feeding was begun in two hours, and the child died four hours later.



Weight-chart in Case 17, illustrating usual gain in average case after gastro-enterostomy.

With four or five exceptions the babies were emaciated, with wrinkled skins and sunken eyes. The lower abdomen was retracted and usually soft, while the epigastric region was full and prominent and all the patients presented at some time, in the region of the stomach, peristaltic waves passing from left to right. While these waves are present in all tumor cases, they may also be present in the so-called spasm cases and should not lead to the diagnosis of true stenosis without other more reliable symptoms and signs. On palpation, to the right of the median line below the costal margin, a firm movable tumor about the size of an olive was felt in each case, with the single exception of the first one, and in this instance the tumor was made out under the anesthetic before the abdomen was opened.

Beginning with the eighth case, aspiration of the stomach was practiced as a routine measure, and each stomach was found to have from ½ to 4 ounces' retention three hours after feeding, even though vomiting had occurred.

We did not consider it necessary or even desirable to submit the babies to Roentgen-ray examination before operation. On account of the extreme irritability of these stomachs, conclusions based on the emptying-time are liable to be misleading, and even if a small amount of bismuth passed through the pylorus, no information would be given thereby that the story of the stools and weight-chart had not already told. Such an examination might possibly be indicated in an exceptional case, but I feel that the diagnostic points already enumerated are sufficiently conclusive. Aspiration has all the advantages of the Roentgen ray in this condition and is more feasible. The average duration of symptoms before operation was performed was two weeks and one day; the longest period was eight weeks and three days, and shortest period six days.

When the abdomen was opened, a pyloric tumor varying in size from the terminal phalanx of the ring-finger to that of the thumb was found in every case. These tumors were hard, smooth, freely movable and free from adhesions. The pyloric portion of most of the stomachs was thickened and somewhat edematous, and about half of them were dilated. No other pathologic lesions or malformations were found. A typical posterior gastrojejunostomy was done in twenty-one cases, and the Weber operation of partial pyloroplasty as described by Rammstedt in one case.

A passing remark as regards a few points in the technic may not be out of place. Ether should be the anesthetic used. The abdominal incision should be from ½ to ¾ inch to the left of the median line. The reasons for this are twofold: In the first place there is so little subcutaneous tissue in these babies that there is difficulty in obtaining union in the median wound, whereas the incision through the rectus muscle heals much more readily. Many postoperative deaths have followed evisceration resulting from non-union in these cases. The second reason for placing the incision to the left of the median line is the avoidance of the round ligament of the liver. At necropsy, in one of our fatal cases, a large hemorrhage was found just where the needle used in closing the abdominal cavity had punctured this ligament.

With the exception of the first two cases, stomach-clamps were not used in doing the gastro-enterostomy. There is practically no leakage from the stomach or intestine, and very little bleeding in these cases. A number of the operations were done in twenty-five minutes — longest time forty-five minutes. The partial pyloroplasty, or "nicking of the circular muscle-fibers," consisted in making an incision 1 inch long through the peritoneum and circular muscle-fiber down to the mucosa. The edges of the wound gaped widely and the mucous membrane immediately protruded. No effort was made to close or cover over the incision. This simple division of the circular muscle at once relieved the obstruction, as shown by the ability to express air freely from the stomach into the duodenum. In making the incision the tumor should be held firmly between the thumb and index-finger in

RECORD OF TWENTY-TWO OPERATIVE CASES OF PYLORIC OBSTRUCTION IN INFANTS

Case No.	Hospital Record Number	Sex*	Age Weeks	Date of Operation	Remarks	Weight At Birth, Lbs.	Weight At Operation, Lbs.	Final Result with Note as to When Last Seen
1	Babies' M. H.	♀	8	4/29/10	Vomiting began in 6th week, always forcible and in large quantities. At same time infant was constipated.	8½	8	Died 11 days after operation; necropsy: Wound healed perfectly; no pathologic cause for death found; pylorus tight.
2	Babies' 3906 D. B.	♂	6	7/30/10	Vomiting began in 4th week; this along with constipation continued till admission. Vomiting always forcible and directly after eating.	11(?)	9 1/16	Discharged Aug. 9, 1910; weight 9 lbs., 5/16 oz.; readmitted Aug. 13, 1910; died Aug. 13, 1910; Necropsy: Gastro-enterostomy perfectly healed; no adhesions; cause of death; acute gastro-enteritis; pylorus tight.
3	Babies' J. S.	♂	23†	11/27/11	Vomiting began on 11th day. One week before admission constipated; no stool without injection.	?	5 21/32	Discharged Dec. 19, 1911; weight 6 lbs., 5½ oz.; last seen Oct., 1913; well-developed and well-nourished child.
4	Babies' 5719 A. F.	♂	7	12/ 9/11	Began to vomit during 5th week; very little relation to feeding, sometimes immediately after, sometimes one or two hours after; usually forcible.	9	7⅝	Discharged Jan. 1, 1912; weight 7 lbs., 14 oz.; last seen March, 1914; walking: condition excellent; weight 30 lbs.
5	Babies' 6627 J. W.	♂	10	8/ 9/12	Vomiting and constipation from 3d week after birth.	?	5 13/16	Died 6 days after operation; necropsy showed no peritonitis; wound in good condition; tumor size of terminal phalanx ring-finger and admits slate-pencil.
6	St. Luke's Newburg, N. Y. C. T.	♂	7	7/ 8/12	Vomiting and constipation 6th week after birth. Vomiting projectile in character. Lost 2 pounds in one week.	8	9	Discharged July 16, 1912; weight 9 lbs. 5 oz.; last heard from Jan. 25, 1914; weight 28 pounds.
7	Babies' G. L.	♂	3‡	12/12/12	Vomiting began suddenly in 7th week; vomited after every feeding; always projectile and large.	8	7⅝	Discharged Dec. 21, 1912; last seen March, 1914, walking; weight 26 pounds; 16 teeth.
8	Babies' 7107 H. L.	♂	7	1/ 1/13	Began to cough and vomit in 5th week. During the 6th week symptoms had become worse, vomited after every feeding.	§	6⅛	Discharged Jan. 28, 1913; weight 6 lbs. 11½ oz.; last seen March 12, 1913; weight 9 lbs. 2½ oz.; excellent condition.
9	Babies' 7127 T. V.	♀	2‡	1/20/13	Typical symptoms began at 2d week of age. Nursed for 5 weeks and for past 3 weeks was fed patented food under direction trained nurse. Admitted in dying condition. Temperature too low to register by thermometer until mustard bath was given.	10(?)	5 11/16	Died 1½ days after operation. Necropsy: Large hard tumor—admits probe—no repair.
10	Babies' 7228 P. B.	♂	7	2/ 9/13	In 3d week sudden onset of projectile vomiting, six or seven times daily, soon followed nearly every feeding. Obstinate constipation and loss of weight.	8	6⅛	Died 9 hours after operation. Necropsy: Large blood clot in transverse fissure of liver from falciform ligament.
11	Babies' 7382 M. C.	♂	6½	3/27/13	Vomiting began suddenly in 3d week, sometimes occurred during feeding, but most often few minutes after; always a larger amount. Condition bad; given mustard baths, hypodermoclysis, etc.	7⅛¶	5 9/32	Died 10 hours after operation. Necropsy: Anastomosis firm. Pylorus admits small probe.
12	Babies' 7651 S. G.	♀	8	6/13/13	Spat up once or twice a day and vomited occasionally before 5 weeks old. Vomits at times while nursing, just afterward, or within an hour. Vomiting is projectile. Three weeks constipation. In collapse at time of operation.	‖	6 7/16	Died 4 hours after operation. Necropsy: Large hard tumor.
13	Babies' 7809 R. J.	♂	4	7/14/13	Ten days before admission began vomiting after nearly every feeding; continued for two or three days, then vomited after all feedings. Vomiting always forcible.	‖	5 21/32	Discharged Aug. 10, 1913; weight 7 lbs. 1 oz. Last seen February, 1914, weight 16 pounds.
14	Babies' D. P.	♂	4	7/17/13	Vomiting began 3d day after birth, and at the end of the first week it occurred during or soon after every feeding; obstinate constipation.	8½	6⅛	Discharged July 31, 1913. Cured, weight 7 lbs. 8 oz. Died Nov. 2, 1913, of laryngeal diphtheria. Condition had been splendid; just before death weighed 15 lbs. Necropsy: Tumor persists, rather small and admits slate-pencil.
15	Babies' 7953 M. G.	♂	6	8/10/13	Vomiting began about one week after birth. Let up during 3d week; recurred and followed every feeding; never projectile.	?	5 9/16	Died 5 days after operation. Necropsy: general peritonitis from leakage; no effort on part of wound to heal.
16	Babies' R. W.	♂	6	12/ 4/13	Began to vomit in the 5th week; always projectile.	‖	9⅛	Discharged Dec. 15, 1913; weight 9 lbs. 7 oz. March, 1914, weighs 13 pounds.
17	St. Luke's 98286 E. B.	♀	5	1/24/14	Vomiting began in the 4th week. Did not nurse well from birth; reached birth-weight on 12th day, but never went over it. Lost 1 lb. and 4 oz. in 6 days.	6⅛	5	Discharged Feb. 23, 1914; weight 6 lbs. 12 oz.; March 27, weight 7 lbs. 11 oz.
18	Babies' W. M.	♂	4	3/30/14	Vomiting began about 20th day after birth, gradually increasing in frequency and force. Became forcible 5 days before admission.	8¾	7⅝	Discharged April 8, 1914; weight 8 lbs. 3 oz. At present the child is in good condition.
19	Babies' J. W.	♂	4	4/10/14	Began to vomit on the 12th day (while nursing) after birth. Weaned on the 21st day. Improvement slight and only temporary on artificial food. Marked jaundice for 4 days before operation, and vomiting became projectile 4 days before operation.	7½	6 15/16	Discharged April 18, 1914; Weight 7 lbs. 3 oz.; jaundice disappeared 4 days after operation. May 10, 8 lbs. 8 oz.
20	Babies' E. H.	♀	5	4/15/14	Up to 2 weeks of age occasional regurgitation. At 2 weeks vomiting started gradually increasing in frequency. Vomiting became projectile 7 days before admission. Nursed up to present time.	?	5 5/16	Discharged April 27, 1914; weight 5 lbs. 15 oz. May 14, 6 lbs. 3 oz.
21	Babies' T. W.	♂	7	4/16/14	Regurgitation one to three times a day started at 4 weeks old. Real vomiting started at 6 weeks; three to five times a day up to 7 weeks old, and then after practically every feeding. Never projectile though slightly forcible on one occasion.	7 7/16	6 11/16	Discharged April 29, 1914; gained 11 ounces.
22	Babies' W. S.	♂	6	4/23/14	Vomiting started at age of 4 weeks and 2 days; once a day for 4 days and then gradually increased in frequency; 3 days before operation vomited after every feeding. Vomiting projectile from the first and usually very large amount.	6	6⅛	Discharged May 5, 1914; gained 8 oz. May 14, weight 7 lbs. 9 oz.

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* In this column ♂ means boy and ♀ girl. † Days. ‡ Months. § Small baby at birth. ¶ At onset of symptoms. ‖ Large baby.

such a way that the edges of the wound are gently drawn apart, and as the incision is deepened a definite line of cleavage will be seen to exist between the pyloric muscle and the mucous membrane. If this point is observed, injury to the mucosa is not likely to occur. Gastro-enterostomy should be the operation of choice in all cases in which the condition of the child is even fair, for the reason that it is an established surgical procedure, the results of which are certain, and the partial pyloroplasty reserved for those cases in which haste is the first consideration. The latter operation is not free from the immediate risk of injury to the mucosa, and its future is uncertain. In Case 20 the recovery of the child has been uninterrupted, but its progress has been much slower than in the other cases.

The after-care of the patients is extremely important, and much depends on the judicious use of stimulants in the form of brandy, atropin and caffein, and also the proper use of fluids by hypodermoclysis and the Murphy drip. That it is not necessary to resort to these measures in the cases which come to operation while yet in good condition is shown by the postoperative reaction and convalescence of a number of the babies in this series, the postoperative course of which reminded one much of the after-history of the average gastro-enterostomy in the adult. Feeding should be started just as soon as possible after operation; small quantities of water alternating with diluted breast-milk were given hourly, beginning as early as the second or third hour in several of our cases. The amount should be increased gradually, and if it is well borne, the child may be put back to the breast in forty-eight hours. It is important to elevate the head of the bed just as soon as reaction is well established, as this facilitates the escape of gas and greatly lessens the tendency to vomit.

A colon irrigation should be given in twenty-four hours, or sooner if there is much distention. The first fecal stool usually occurs from twenty-four to forty-eight hours after operation; if not by this time, from 1 to 2 teaspoonfuls of castor oil should be administered.

I am indebted to the Medical Service of the Babies' Hospital for the privilege of operating in twelve of the cases; the others came through various consultants. In no case have I declined to operate on account of the poor risk. I have not operated for so-called pyloric spasm without hypertrophy, nor do I believe that such patients should be operated on. Two of these patients have been seen in consultation and surgical treatment advised against. Both made good recoveries. There were seven deaths in the series, which must stand on the records as representing the operative mortality. Of the seven patients, three (Cases 9, 11 and 12) were in a collapse at the time of operation and the outcome was to be expected. Our judgment in each instance was against operating, but we had had two infants in almost the same condition (Cases 3 and 8), both of whom came through the operation with little or no additional shock and are to-day in perfect health. A note taken from the history of Case 3, made just prior to operation reads as follows:

> Weight 5 pounds 10½ ounces; temperature 103.2 at 7 a. m., normal at 9 a. m.; child is becoming more relaxed, shows a decided loss of tone. Strychnin sulphate, 1/150 grain, ordered every four hours and a mustard bath three times a day. Vomiting forcible and in large amounts persists. General condition since 5 p. m. yesterday has grown gradually but steadily worse. Pulse is not good; child looks sick about the eyes. P. M. Note: Child prostrated, in a dying condition, rallied slightly toward evening. As a last resort the baby was operated on at 10 p. m.

The history of Case 8 has the following note made on the day of operation:

> This forenoon the appearance of the baby did not seem quite as promising, although yesterday he took all his food except 2 ounces, and stool contained some fecal matter. To-day had one stool (4 p. m.) a dark green-brown stain. Toward evening he did not seem so lively as in the morning; cry feeble, and on the whole decidedly more asthenic. Aspiration showed 1½ ounces' retention—more than any previous aspiration. In view of the fact that the baby has little food coming through as evidenced by his stools, his progressive asthenia, non-response to feeding and inability to pass the duodenal tubes (Numbers 11, 12, 17 French), operation was decided on to-night.

Not to have operated in the three cases above referred to after such a happy outcome as resulted in Cases 3 and 8, would have been unfair.

Patient 1 died on the eleventh day after operation. This baby was given fourteen days of careful medical treatment, during which time the condition was thought to be due to pyloric spasm, as no tumor could be made out. The child became very weak and operation was decided on. Under anesthesia a large tumor could be felt at the pylorus. There was no shock. Small amounts of water were begun after seven hours. Note day after operation says, "Child looks well." The first movement occurred thirty hours after operation, and there were several movements daily from that time until death. There was no vomiting for several days and the child seemed to be on the road to recovery, but about the fifth day after operation the condition became unsatisfactory. Vomiting recurred and in spite of every possible means of relief the child grew progressively worse and died eleven days after operation. Complete necropsy failed to disclose the cause of death. The wounds had healed perfectly and there were no adhesions.

Patient 5 died six days after operation. The indications for operation seemed clear—projectile vomiting, marked loss of weight, palpable tumor, constipation, and the fact that the duodenal catheter could not be passed. The stomach was found to be intensely dilated, the walls thickened and edematous; the tumor was the size of the terminal phalanx of the middle finger. There was no shock. Three hours after operation, the patient began to vomit small amounts. Feeding was begun in ten hours; the first stool was noted thirty-six hours after operation, and during the second day there were seven stools. The patient vomited three or four times each day, the vomitus gradually becoming larger in quantity and projectile. There was no abdominal distention. The patient died on the sixth day. Necropsy showed no peritonitis, and anastomosis firm. The tumor persisted at the pylorus, but the lumen would easily admit a slate-pencil. Possibly the patency of the pylorus in this case, by allowing food to pass through, had something to do with the continued spasmodic contraction. That food entered the intestine freely was shown by the size and quality of the stools.

Patient 10, weight 6 pounds 2 ounces, although rather feeble, stood the operation very well, with little or no shock. Small quantities of water were begun after three hours. Six hours after operation the patient's condition became critical; four hours later the baby died. Necropsy disclosed a large blood-clot in the transverse fissure of the liver, and the hemorrhage could be traced directly to a catgut suture which had been passed through the round ligament. Cause of death was postoperative hemorrhage.

Patient 15, a small baby, weight 5 pounds 3 ounces; did well for three days, but then began to show signs of peritonitis. It died on the fifth day after operation. Necropsy disclosed general peritonitis from leakage, with no effort at repair.

These two cases illustrate dangers of the operation which cannot be overestimated, and show that even though one has had some experience in this work, fatal errors in technic may and do occur.

Of the seven fatal cases, so far as we know, only one had had careful medical attention and treatment from the beginning of the symptoms; most of the patients had made an occasional visit to the doctor or dispensary and a few had been seen by specialists in consultation, whereas, of the fifteen that recovered, nine were private patients, all of whom had been treated skilfully by competent men from the onset of symptoms, and had been seen in consultation by either Drs. Holt, Kimball, Kerley or La Fetra. These cases came to operation after a reasonable time had been spent in attempting to control the symptoms by medical means; the patients were still in good condition, and as a result made practically uninterrupted recoveries. Two patients died after discharge from the hospital, from causes in no way connected with the operation. Patient 2 was discharged twelve days after operation, having gained 4 ounces and was brought back four days later with an acute gastro-enteritis from which it died. Complete necropsy showed the wound in perfect condition and the cause of death to be acute enteritis. In the other fatal case (No. 14), the patient was discharged July 31, 1913, and died Nov. 2, 1913, of laryngeal diphtheria. The condition had been splendid and just before death the baby weighed 15 pounds. Partial necropsy showed that the tumor, which was rather small, but very hard at operation, persisted.

Careful examination of the stomachs removed at necropsy from the patients dying after operation showed that the pyloric tumors were almost exactly of the same size and consistency as they had been at the operating-table, varying in size from the terminal phalanx of the ring-finger to that of the thumb and having the consistency of cartilage. They were formed entirely by the hypertrophied circular muscle-fibers of the pylorus. The mucous membrane lay in longitudinal folds in the lumen. It was much thickened and arranged in a more or less spiral manner.

In view of the experience gathered from the observation of these cases, I believe I am justified in offering the following conclusions:

1. Hypertrophic pyloric stenosis is congenital to the extent that there is an increase in the thickness of the circular muscle-fibers at the pylorus. The presence of this thickened muscle-fiber reduces the lumen of the pylorus, and therefore the stomach, in order to empty itself, contracts more forcibly than normal. This abnormal contraction soon causes the mucous membrane to become thickened and edematous, and assume a more or less spiral arrangement as it passes through the narrowed pyloric channel of from ½ to ¾ inch. The result is a valvular action which gradually produces complete closure of the pylorus. The question as to whether or not the pylorus will admit a probe or catheter at operation or necropsy is of little consequence when weighed against the clinical evidence of complete obstruction.

2. That there is sufficient time between the onset of symptoms and the appearance of the signs of complete obstruction, for careful observation and the carrying out of any medical measures likely to prove of benefit, there can be no doubt, provided, of course, that the early symptoms have been properly interpreted. The fear, however, that the condition may have existed longer than has been suspected, and that the vitality of the baby is not so good as appearances would lead us to believe, makes me feel that operation is indicated in every case of hypertrophic stenosis as soon as the diagnosis is made. Should depression or early evidence of shock be present, immediate operation is demanded.

3. The babies coming to operation in good condition suffer little or no shock; their convalescence is straightforward, and they are at once restored to normal health. My experience in this respect corresponds with that of other operators.

I cannot close this paper without referring to the wonderful results obtained by Drs. Scudder of Boston and Richter of Chicago in the operative treatment of pyloric stenosis. The former has recently reported a series of seventeen cases with four deaths and the latter has a record of twenty-two cases with three deaths.

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AN INTERNAL ALEXANDER OPERATION *

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Retroversion of the uterus may be associated with general abdominal and pelvic visceroptosis, or it may be due to impaired function of one or more of the so-called uterine supports. In the latter case there is usually a secondary impairment of function of the remaining supports which are, of course, thrown out of normal action in consequence of the abnormal position of the uterus. An operation to relieve such a deformity does not necessarily have to attack all of the overstretched or relaxed structures, for, when the equilibrium of the uterus is restored and maintained for a certain length of time, those supporting structures which are only slightly deficient or are secondarily disabled may often be depended on to resume function. In limiting myself to the discussion of this class of cases, I am assuming that there is no defect in the pelvic floor, or that such defect has been remedied.

The operation which has proved most satisfactory under these conditions is the Alexander operation. It is one of the simplest of operations, consisting merely of drawing the round ligaments out through their normal channels, the inguinal canals, until the fundus is pulled to its normal position over the empty urinary bladder, and of reattaching them so as to eliminate their apparent excess in length. The part played by these ligaments in connection with retroversion and the Alexander operation is about as follows: The round ligaments are relaxed when the bladder is empty, or nearly so, although they may be supposed to contract more or less irregularly and effectually when stimulated by the shiftings or motions of the uterus accompanying general physical exercise, forced respiration, coughing, defecation, etc. As the bladder fills and pushes the fundus uteri upward, the ligaments are

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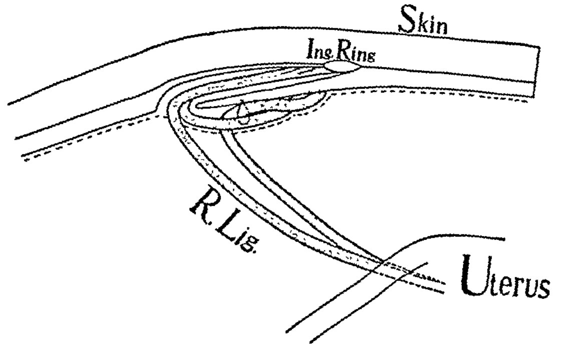
* Read before the thirty-ninth meeting of the American Gynecological Society, May 19, 1914.

put on the stretch and pull gently downward and forward until the emptying of the bladder enables them to contract and replace the fundus. When we consider the fact that they consist largely of muscular fibers and are apt to be temporarily exhausted by steady prolonged resistance, we can realize how retroversion may occur in a person with relaxed pelvic connective tissue who habitually allows the bladder and rectum to become and remain distended. I can conceive how overstretching of the round ligaments can thus become the chief defect, and the relaxation of the tissues behind the cervix may be of secondary importance, and how a restoration to function of the round ligament may become the rational and effective treatment.

When, however, we shorten them, they are not only restored to action, but also made to compensate, to a certain extent, for the relaxation of the cervical supports. We accomplish this by pulling the ligaments taut so that they will not allow the bladder to push the fundus quite so far back. Now if we did nothing more than this there is no doubt but the displacement would frequently recur as a result of the inefficiency of unaided muscle as a steady support, and the delicacy of the connective-tissue structure of the ligaments.



Showing the direction of the normal ligament into the internal inguinal ring, and the shortened ligament folded and attached to the abdominal wall near the internal ring. The dotted line represents the peritoneum.

Hence to render a recurrence less likely we must warn the patient against holding the urine very long, and provide some means of enabling the overstretched sacro-uterine ligaments to contract and regain some of their lost efficiency. A small pessary — one large enough to keep the cervix from coming too far forward during abdominal pressure, and to help overcome the contraction of the vesicovaginal septum due to the prolonged forward dislocation of the cervix, yet small enough to allow of some play of the cervix and thus of some action of the cervical supports — will usually prove a valuable aid to the Alexander operation, and render unnecessary any operative treatment of the sacro-uterine ligaments. On the removal of this small pessary after several months, the cervix is usually found to remain appreciably farther back in the pelvis than it did right after the operation without a pessary.

When the peritoneal cavity is opened by a low median incision for complications of retroversion or for other conditions, we can usually save time by shortening the ligaments through the incision instead of by the Alexander method. But all of the intraperitoneal methods that have been recommended, as far as I have been able to determine, have either proved unreliable or have been associated with objectionable features with regard to their conception or to the resulting complications. The simple folding of the round ligaments is unreliable. Suturing of the folds to the uterus usually produces peritoneal exudates which are often followed by pathologic conditions of the organ with disturbance of its functions. Suturing of the folds to other parts either is unreliable or produces rigid exudates. The passing of the severed ligament, or a loop of it, through the abdominal wall, substitutes a fixed displacement for a changeable one. It is more like carpenter-work than surgery, and is admissible only when circumstances do not allow us to do better. I have not the time here for an enumeration of the objections to each of the numerous methods that have been recommended in our current literature, but they may be classified under the headings, unreliability, adhesions [illegible], abnormal position, restricted [illegible] traumatism, and fundamental errors in conception of objects to be accomplished.

The Alexander operation is freer from these objections than any of the intraperitoneal operative procedures, and in some cases, such as in fat nulliparas, I close the abdominal incision and perform it rather than enlarge the incision and subject the patient to the additional morbidity that so often follows the intraperitoneal methods under unfavorable conditions. The method I now employ, however, avoids intraperitoneal complications and leaves the parts in about the same favorable condition as the Alexander operation. It consists in making a fold near the distal end of the ligament and attaching it intra-abdominally, but extraperitoneally near the internal inguinal ring. Its execution, however, is so simple that a large incision is unnecessary, and it requires much less time, and occasions less trauma than an added Alexander operation. The steps are about as follows:

After the intra-abdominal work for other conditions has been completed, the round ligament is grasped by forceps and pulled out of the inguinal canal until it becomes taut. It is then transfixed by a needle threaded with fine chromic catgut at a point about a centimeter from the internal ring and again about 3 or 4 cm. from the uterine end, and the thread tied so as to make a loop of ligament. The sides of the loop are then sutured with fine chromic or plain catgut forming a sort of double cord. The same is done on the other side and the parts palpated to determine, while there is still time to correct an error in judgment, whether the amount of shortening has been sufficient or excessive.

The peritoneum is next separated freely from the abdominal wall low down on one side of the incision as far laterally as the internal inguinal ring. There is practically no resulting bleeding, and by inserting a short retractor between the peritoneum and rectus muscle one can raise the abdominal wall and do the subsequent work by the aid of sight and touch. With a slender, slightly curved pair of snap-forceps, a puncture from without inward is made in the peritoneal membrane near the internal inguinal ring, and the end of the loop of ligament grasped and pulled through the puncture until the sutured portion of the ligament is all extraperitoneal.

The loop is now given a half twist on itself and, with a curved needle and permanent suture, its base is sutured to the inner surface of the abdominal wall as near the internal ring as possible without danger of puncturing the epigastric artery. The loop of ligament, which is practically a short double cord, can now be horizontally sutured along the abdominal wall with as many or as few absorbable sutures as may seem advisable for the production of adequate adhesions. As the suture that makes the loop is a centimeter away from the internal ring and also from the permanent attachment suture, there is a little play of the ligament at the internal ring and some elastic traction exerted by the normal attachments in the inguinal canal. This play of the ligament prevents the muscular atrophy that takes place in it when it is drawn through the abdominal walls so as to suspend the uterus rigidly.

After the operation has been finished on both sides, the slight oozing of blood that may have taken place between the separated peritoneum and abdominal walls will have ceased and the intra-abdominal pressure will cause a firm coaptation of the raw surfaces as soon as the incision is closed. If the loop of ligament has been drawn carefully through a small peritoneal puncture, the peritoneal cavity will be completely shut off from the space in which the ligament is sutured and this space can be safely disinfected with an efficient germicide. I usually sponge it out with a 1:2,000 solution of mercuric chlorid in case there has been any chance for infection. I have never seen any bad results from separating the suprapubic peritoneum from the abdominal for this purpose.

Should the permanent suture give way and the ligament separate from its attachment to the abdominal wall, the loop will still be held by its subperitoneal embedded attachment, for it cannot suddenly slip through the peritoneal puncture after having grown into it. Nor are the sides of the loop of round ligament very liable to be torn apart after having grown into the subperitoneal connective tissue. Hence the chances of failure are not so great as they would be if the success depended only on attaching the ligament intraperitoneally to the inner surface of the abdominal parietes.

As the only intraperitoneal part of this method consists in making the small loop of ligament and suturing its sides together, and as this loop is drawn through a puncture until it entirely disappears from the peritoneal cavity, and as the ligament pulls from the neighborhood of the internal inguinal ring, I feel justified in saying that the intraperitoneal conditions after the operation, as far as the shortening of the ligaments is concerned, are the same as after an Alexander operation.

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Home-Project Agricultural Instruction.—Massachusetts has a law providing for agricultural courses in all state-aided schools. Pupils in the agricultural courses in the schools are required to carry out a certain amount of agricultural work at their homes, under supervision of the schoolteachers during the summer vacation. A number of these schools have been established, and much enthusiasm has been shown by the pupils, and great interest is taken by the parents in these projects. The interest of the pupils in school work is thus kept up beyond the age of 14, when many of them would otherwise leave school. It makes for good citizenship and should have great possibilities for furthering public health and sanitation. A report covering this work has been issued by the United States Bureau of Education as Bulletin, 1914, No. 8.

THE TREATMENT OF TETANUS BY ANTITOXIN

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The efficacy of antitetanic serum in the treatment of developed tetanus has been questioned by many experienced clinicians, who have regarded the recoveries in occasional cases of tetanus under large doses of serum as fortuitous; and if one may judge from the lukewarm advocacy of serum in most text-books, the general impression of the profession is that but little can be accomplished by its use. A study of the mortality statistics of most hospitals shows that this skepticism too often has been well founded. Opposed to this pessimistic view are the reports of a number of small groups of carefully observed cases, such as those of Ashhurst and John, in which the evidence seems strong that antitoxin deserved large credit for the recovery of some of the patients, and that the mode of administration of the remedy is a very important element in its success.

The collection of the 225 reports of cases here analyzed was undertaken with the object of ascertaining, in the first place, what results are being obtained in this country with antitetanic serum in the treatment of tetanus, and, in the second place, whether the failures in some cases may not be ascribed to the faulty and inefficient method of giving the serum. Statistical studies of case-reports collected from the literature are necessarily subject to error, and particularly in tetanus, such tabulations have led to conclusions favorable to serum treatment to a degree unwarranted by the actual facts.

With one or two possible exceptions, none of the cases in this series have been reported, and all were obtained by personal correspondence from hospital or private records, for the years 1907 to 1913.[1]

TABLE 1.—MORTALITY OF THE SEVERAL CLASSES OF CASES

CASES TREATED WITH ANTITETANIC SERUM

Incubation, Days	Total Cases	Died	Recovered	Mortality, Per Cent.
5 and less	38	27	11	.....
6	18	15	3	.....
7	21	16	5	.....
8	17	14	3	.....
9	24	17	7	.....
10	13	7	6	.....
	131	96	35	73.28
From 11 to 15	47	22	25	.....
16 and over	22	6	16	.....
	69	28	41	40.57
Incubation known	200	124	76	62.00
Incubation unknown	25	15	10	60.00
Total cases	225	139	86	61.77

CASES TREATED WITHOUT SERUM

Incubation, Days	Total Cases	Died	Recovered	Mortality, Per Cent.
10 and less	12	11	1	.....
Over 10	4	2	2	.....
Unknown	5	5	0	.....
Total cases	21	18	3	85.7

Table 1 summarizes the mortality of the several classes of cases. The mortality in all cases receiving serum is 61.77 per cent.; in 21 cases without serum the mortality is 85.7 per cent. The number of cases in the latter group is, of course, too small to establish a mortality for tetanus, but it agrees with the generally accepted figures of many writers on tetanus, that is, from 78 to 89 per cent. Permin[2] found a mortality of 78.9 per cent. in 199 cases of tetanus without serum; in 189 cases receiving serum the mortality was 57.7 per cent. It appears, therefore, that the mortality is about 20 per cent. lower in patients receiving serum than in those treated without serum.

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[1] All cases reported by any one observer are included, so far as the completeness of the data permit. The data of 80 cases were obtained by me directly from hospital records. About 20 cases occurred in the private practice of physicians. The remainder were hospital cases, treated for the most part in large metropolitan hospitals, including Bellevue, Massachusetts General, Boston City, Buffalo, Philadelphia General, Royal Victoria and Cook County, Wesley, Presbyterian and Michael Reese in Chicago. To those who have so kindly assisted in the collection of cases my best thanks are extended. A fuller acknowledgment will be made in the complete paper in the Journal of Infectious Diseases.

A further analysis of these cases with respect to the size of the dose, method of giving the serum and duration of symptoms before the serum was given suggests the reasons for failure in some cases.

TABLE 2.—RESULTS WITH RESPECT TO TIME WHEN SERUM WAS GIVEN AND SIZE OF DOSE IN FIRST TWENTY-FOUR HOURS OF TREATMENT*

	Large Doses		Small Doses		Mortality	
Incubation Days	Died	Recovered	Died	Recovered	Large D.	Small D.
A. Cases receiving first serum within 24 hours of first symptoms:						
10 and less	41	13	21	3	75.9	87.5
Over 10	11	15	6	3	42.3	66.6
Totals	52	28	27	6	65.0	81.8
B. Cases receiving first serum in second 24 hours after first symptoms:						
10 and less	11	9	6	0	55.0	100.0
Over 10	2	8	1	0	20.0	....
Totals	13	17	7	0	43.3	100.0
C. Cases receiving first serum over 48 hours after first symptoms:						
10 and less	10	6	7	4	62.5	63.6
Over 10	7	10	1	5	41.1	16.6
Totals	17	16	8	9	51.5	47.0
Grand Totals:						
10 and less	62	28	34	7	68.8	82.9
Over 10	20	33	8	8	37.7	50.0
Totals	82	61	42	15	57.3	73.7

* In this table a small dose = 3,000 units or less subcutaneously; a large dose = over 3,000 subcutaneously or 3,000 or less intraspinally or intravenously.

In the average patient suffering from tetanus in whom symptoms have just appeared, the following conditions are present: Some of the toxin has already reached the central nervous system, and trismus or other evidence of tonic spasm suggests the diagnosis; another portion of toxin is ascending centralward in the nerves supplying the infected extremity; a still larger amount of toxin is present in the blood, and is being taken up and traveling centralward along the other nerves of the body. Some of these patients have already received a fatal dose of toxin in the peripheral and central nervous system when they are first seen, and will die no matter what is done. Patients whose condition is apparently hopeless, however, and in whom convulsions have already begun, may recover, and since, at the present time, there seems to be no criterion by which we may be sure that the fatal dose has already reached the central nervous system, all patients should receive energetic treatment.

The necessity for haste is evident. The toxin still free in the blood must be neutralized as quickly as possible, and for this purpose the intravenous injection of serum is advisable. Next in rapidity of absorption is the intramuscular route, which should be employed if, for any reason, the intravenous method cannot be used. Antitoxin given subcutaneously reaches the maximum concentration in the blood only toward the end of the second twenty-four-hour period after injection. This delay in absorption may entail a lapse of time sufficient to allow the development of a fatal intoxication. It is true that in some cases the formation of the toxin may proceed slowly, so that the subcutaneous injection of antitoxin may prove life-saving, but in the ordinary acute case a dose of from 1,500 to 3,000 units given subcutaneously can be of little immediate value in neutralizing toxin in the blood and staying the course of the disease.

The importance of intraspinal injection of antitoxin as a means of dealing with toxin that has already reached the central nervous system has been recently emphasized by Park, who has shown that animals in which tetanus has already developed may be saved by antitoxin in adequate doses, and that the results are better and smaller doses required when the antitoxin is given intraspinally than when other routes such as the intravenous are employed. These experimental results, together with a number of favorable results in human tetanus, indicate that the intraspinal injection of antitoxin should be urged in all cases of tetanus.

The intraneural injection of antitoxin serves to neutralize that portion of toxin peripheral to the point of injection in the nerves supplying the infected extremity, but from what we know of the distribution of toxin in the body in human tetanus, the instances in which this method alone is life-saving must be extremely rare.

In Table 2 the cases are divided into groups with respect to (1) the incubation period, (2) the time elapsing from the appearance of symptoms to the beginning of treatment, and (3) the size and efficiency of method of injection of the dose of antitoxin. This classification may be criticized as faulty in a number of particulars, but taking the cases in the aggregate, it offers a basis of comparison as accurate as can be obtained from the data available. A comparison of the mortalities of cases receiving large and small doses of antitoxin shows the importance of adequate dosage and proper method of injection. In acute tetanus a small dose of antitoxin given subcutaneously does very little good. The reduction of aggregate mortality over the mortality of untreated tetanus is evidently due to the favorable results obtained in the cases in which larger doses were employed in an efficient manner.

Some comment is necessary on the relative mortalities of cases receiving large doses in the first and second twenty-four-hour periods. The lower mortality in the second group (*B*) is obviously due not to the postponement of treatment, but to the fact that a large number of patients with acute tetanus die within from twenty-four to thirty-six hours after the appearance of symptoms. Such cases will necessarily appear for the most part in the first group (*A*), and the second group (*B*) accordingly will show a lower mortality through this unavoidable element of selection.

Likewise, the third group (*C*) necessarily contains cases with slower onset, milder course and correspondingly less grave prognosis, in which the necessity for rapid neutralization of toxin is less urgent, and the difference between the results obtained by large and small doses of antitoxin disappears. It should be remembered, however, that these cases are distinguishable only after the termination of illness, and the fact that they occur should be given no weight in planning the treatment of the individual case. Every case of tetanus is extremely serious.

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[2] Permin: Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1913, xxvii, 1.

A similar tabulation of cases with respect to the total amount of serum used in treatment showed essentially the same relation of efficient dosage to lowered mortality.

Magnesium sulphate was given intraspinally in 18 cases which received also serum; in 4 cases, 2 acute and 2 chronic, the patients recovered, giving a mortality for the group of 77 per cent. In 2 cases death occurred shortly after the injection, with symptoms of respiratory paralysis.

SUMMARY

1. From these statistics it appears that the mortality of tetanus treated by tetanus antitoxin is about 20 per cent. lower than the average mortality of tetanus treated without serum.

2. The mortality of cases treated by efficient methods and adequate dose is considerably lower than that of cases receiving small doses subcutaneously.

SUGGESTIONS FOR THE TREATMENT OF TETANUS

The prophylactic value of tetanus antitoxin is established, and needs no argument for its support. That tetanus antitoxin properly used may save the life of a patient in whom tetanus has already developed should be more generally recognized, and the treatment employed in every case at the earliest possible moment. Every hour lost before the giving of the antitoxin decreases the chance of saving life. By no means will every patient recover, but certainly more can be saved than have been in the past five years, and there is every reason to anticipate that with a proper use of antitoxin a mortality considerably lower than that of the present will be obtained.

It is important that the full effect of the antitoxin be obtained immediately, and this may be accomplished by giving, as outlined by Park, 3,000 units intraspinally, and from 10,000 to 20,000 units intravenously at the earliest possible moment after symptoms of tetanus appear. On the following day the intraspinal injection of 3,000 units may be repeated. The blood remains strongly antitoxic for several days. On the fourth or fifth day 10,000 units should be given subcutaneously to maintain the antitoxin content of the blood.

It is doubtful whether the enormous doses given in some cases over periods of many days are any more effective than the more limited dosage outlined above. If only a small amount of antitoxin (3,000 units) is available it should be given intraspinally. Intraspinal and intravenous injections should be given with all the precautions usually enjoined for these methods.

This use of antitoxin in no respect replaces other recognized non-specific methods of treatment in tetanus. Surgical treatment of the site of infection should be instituted at once. The patient should be placed at rest in bed in a quiet darkened room, and should receive sufficient sedatives to control convulsions, together with adequate supply of fluid nourishment and attention to elimination by kidney and bowel. The necessity for large and continued doses of sedatives such as chloral or chlorbutanol should not blind the physician to the possible danger of giving an overdose. The condition of the patient should be carefully watched, and a revision of the standing orders for sedatives made whenever the symptoms suggest the necessity for decrease or increase of dose.

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VAGINAL DRAINAGE

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The question of how, when and where to drain is still a matter of constant debate, and a general or universal law of how, when and where has not been established. In the modern trend of surgery, with the growing tendency to "close without drainage," there is no auto-interrogation more often propounded by the operator than "Shall I or shall I not?" I doubt whether the leaning to the more common practice of "I shall not" is the wisest, most comfortable and safest plan for our patients. This question, however, cannot be decided affirmatively by answering that the results justify the means, because the general improvement in surgical skill and aseptic technic certainly must be taken into account.

Heretofore, too many patients were drained, but I fear that we are now approaching the danger-point at which drainage is not practiced sufficiently. Successful issues in cases in which drainage has been considered, unfavorably decided against, and therefore discarded, have and will continue to lead operators to try greater hazards until a calamity befalls, when they run to cover in the opposite extreme of more generous and general drainage. While the teaching of Keith, "when in doubt, drain," is not of so grave importance as it was in his time, it is still worth remembering, and its milder application to surgery to-day will, in many cases of doubt, give the surgeon confidence and his patient more comfort and hope for the future.

It is not the object of this paper, however, to discuss in detail the broad subject of drainage, but rather to limit its scope to the consideration of the drainage of the female pelvis. It is hard to conceive why there should be a division of opinion in selecting the route through which the pelvic cavity of women should be drained. The majority of surgeons, I believe, realize the advantages of drainage through the vaginal channel, and practice it more commonly than ever before. A great number of men, however, persistently cling to the abdominal route and are reluctant to discard this system and adopt the plan which Nature has provided in the vaginal canal.

The failure of some men to select the vagina as a drainage channel is due largely to the fact that they are wedded to custom and fail to recognize, by impartial trial, the advantages offered by utilizing the drainage tract provided by Nature. Would not the more general practice of vaginal drainage of pyogenic infections, involving the pelvic organs, be associated with a less number of infected incisions; would not reopening of the abdominal incision be less frequently required; would not this method bring to the surgeon a less amount of worry, and would not the patient suffer less discomfort, would not her convalescence be more expeditious and calm, and could not one give unquestionably greater assurance of a successful issue in doubtful cases? I fail to see the wisdom of draining pyogenic infections of the pelvic cavity through the abdominal incision, as this method positively has many disadvantages which cannot logically apply to drainage established through the vagina. Therefore, when drainage of the female pelvis is contemplated the vaginal route should be the method of choice.

DISADVANTAGES OF ABDOMINAL DRAINAGE

Abdominal drainage, as has been intimated, has many objectionable features, because it is associated with questions both of economic and vital interest to the patient. No claim can be made for it as a safer procedure than vaginal drainage, and it is of extreme economic moment to the patient, because of necessity it means a prolonged convalescence, and therefore, a longer domicile in the hospital with the additional expense entailed thereby, and a longer period of isolation from remunerative occupation. Besides, it is associated with a greater degree of discomfort than vaginal drainage, and is infinitely more painful and distressing because the abdominal wall is constantly soiled and irritated with material drained. (No objection can be made to the statement that there is a greater danger of infection, more or less general, of the abdominal incision, with material of an infected nature passing through an angle of the abdominal wound.)

An infected incision, therefore, means, to a certain degree, faulty union with a strong likelihood of a weakened abdominal wall with the probability of a subsequent ventral hernia. Should the wound escape infection, the angle through which drainage has been placed and removed heals not by primary reunion, but by second intention, and this, therefore, will predispose the patient to the development of rupture. Abdominal drainage certainly cannot offer more freedom to drainage material than the natural channel leading from below.

One who has practiced abdominal drainage is constantly reminded of and realizes, with deep concern, the dangers incident to the removal of an abdominal drain, especially of the possibility of breaking up adhesions and scattering infection or tearing bowel or omentum or delivering one or both of these structures into the abdominal incision, with the subsequent formation of more or less extensive adhesions and the probability of intestinal obstruction. Is it not good surgery to institute methods which will insure speedy recovery and a short convalescence with the least possible discomfort and the avoidance of subsequent harmful, painful or even surgical sequelae? These ideals of surgery will not accrue from the hard-and-fast rule of abdominal drainage. Many of these ideals can be brought about by the practice of utilizing Nature's tube. It is not at all too much to contend, therefore, that many of the disadvantages mentioned above can be materially reduced and, in the majority of cases, entirely obviated by the practice of vaginal drainage.

In a discussion of this subject at a recent meeting the statement was made that one of the principal disadvantages of vaginal drainage was due to the fact that the drain could not be allowed to remain so long as it could in the abdominal incision, for the reason that "it became foul and offensive." Nothing could be more erroneous than this. The foulness of a drain does not depend on the length of the time it is allowed to remain in the field of operation, but rather on the character of the infection present at the time of operation. A necrotic colon infection will cause drainage material to become foul and offensive, it does not matter where it is located, whether in the vagina or in the abdominal incision. Moreover, foulness does not cause harm. It is a good sign that offensive material is being carried away, and surely it is better to have material of this character without than have it manufactured and pent up within. Indeed, it is not the drain that is foul, but the material the drain is carrying away.

A very important question in this connection is, How long should the drain remain? It is my practice and established rule never to remove, or allow to be removed, a vaginal drain under six days, and I frequently allow it to remain for eight or ten days without any harmful results. It should not be removed too early because the walling-off process by adhesions about the drain is not firmly formed, and therefore, there is a greater danger of breaking up Nature's delicate bands and of disseminating infection. Moreover, if the drain is allowed to remain for several days it is not necessary to repack or redrain.

RULES FOR VAGINAL DRAINAGE

In cases of extensive pyosalpingitis and pelvic peritonitis with dense adhesions and infection limited to the structures below the sacral promontory, I believe that drainage should be instituted and that failure to do this will in many instances cause grave alarm in a stormy convalescence and occasionally result in a fatality. Furthermore, I am convinced that the route to be selected should be through the vagina, with the abdominal incision thoroughly and completely closed. I admit, however, that in a few exceptional cases, it would be good practice to institute both vaginal and abdominal drainage.

In conditions such as mentioned above it has been my custom to begin the operation with a premeditative view of establishing drainage, by making a preliminary free posterior vaginal incision. This procedure has the additional advantage of frequently allowing the escape of unsuspected free exudate, and thus, to a certain degree at least, safeguarding the patient from dissemination. After the posterior vaginal wall is freely incised and accumulated material allowed to escape, the cavity of Douglas is cleansed by gentle dry sponging, after which a tampon of plain gauze is placed in the pelvic cavity. This is allowed to remain until after the abdominal incision is made when it will prove, in a measure, a guide to the operator and in many cases point out to him the lines of cleavage in separating existing adhesions.

CHOICE OF DRAIN

It has long been taught that iodoform gauze does not prove an efficient drainage agent, because it hampers drainage and tends to "dam up." This in a measure is true, but in conditions such as we encounter in pelvic infections it is the ideal drain, for the reason that we need an agent that will afford a certain amount of drainage and at the same time act as a compress to control oozing from the raw surfaces left as a result of separating the dense adhesions. I can see no advantage in the T-shaped rubber tubing. One of the prerequisites of a suitable pelvic drain is the power of the drain to act as a compress and, of course, it goes without saying that rubber tubing will not accomplish this purpose.

METHOD OF DRAINING

After completing the removal of the diseased organs such as the uterus, ovaries and tubes, and other necrotic tissue, the pelvic cavity is thoroughly cleansed by dry sponging, and the tampon, previously introduced from below, is removed. A large tampon of iodoform gauze 1 yard long and 1 yard wide, rolled loosely (not tightly) on itself, with all selvages turned in, is then carried into the pelvis, one end of which is made to enter the opening previously made through the posterior vaginal fornix. There should be no set rule, however, as to the dimension of the gauze employed, but a quantity sufficient to fill the pelvis and fairly cover all stumps and raw surfaces should be used. This method will prevent to a large degree oozing from raw surfaces left in breaking up adhesions, and by keeping the intestines and omentum out of the pelvis, it will prevent subsequent union between these structures and the pelvic cavity. There can be no objection to the employment of the preliminary posterior vaginal incision, because it is quickly executed and does not endanger any organ if properly performed. Where a preliminary posterior incision has not been made this operation can be done, but with a greater difficulty from above by picking up the vaginal wall with a double tenaculum close to the cervix, and incising freely. It is, however, much easier and much safer to make the preliminary incision from below. The gauze drain should be allowed to remain, as has been stated, from six to eight days and it should then be removed, preferably under short chloroform anesthesia. No repacking should be resorted to and no douches should be given for several days, because of the danger of washing or flushing fluid into the pelvic cavity through the vaginal opening. Douches should not be used for several days and then only if material is present to require douching. If reaccumulation takes place in the pelvic cavity subsequently to the removal of the gauze, spontaneous opening usually occurs through the line of vaginal incision or, if necessary, the cicatrix can be readily broken through by digital pressure.

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HISTORY OF A TYPHOID CARRIER

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MADISON, WIS.

In the fall of 1910 Mr. A. moved from Minnesota to the town of G., Wisconsin, bringing with him his wife and three boys. He bought a farm 4 miles northeast of the village. In December, 1909, Mr. A. had been operated on in St. Paul for pyonephrosis, and a tumor mass weighing 5 pounds removed. No bacteriologic examination was made. One of the doctors who assisted at the operation states that six months before he had treated Mr. A. for typhoid fever. About the time of moving to Wisconsin the eldest son had typhoid fever, and soon after the two other sons and their mother came down with the disease.

Mr. B. with his family, consisting of his wife, two boys and a girl, moved from Minnesota to Wisconsin about the same time, having purchased a farm in the immediate neighborhood of Mr. A. While the buildings on this place were being put in order Mr. B.'s family stayed at the home of Mr. A., with the apparent result that first the daughter, and soon after Mr. B. and the two sons came down with typhoid fever.

In the fall of 1911 Miss C., a niece of Mr. A., came from St. Paul to teach in the public schools. She was in the habit of spending the week-end at the house of Mr. A. After six weeks' residence in the town of G. she became ill with typhoid fever.

At the same time a sister of Mr. A. visited him and soon after returning to her home suffered from typhoid fever also.

About Aug. 15, 1911, Mr. D. visited at the home of Mr. A. and took supper with him. September 20 Mr. D. entered a hospital after having been sick for some days, and a diagnosis of typhoid fever was made. His illness began during the first week of September.

In the spring of 1912 two young men, E. and F., who were working at the home of Mr. A., both contracted typhoid fever.

In the fall of the same year Mrs. G., a sister of Mrs. A., accompanied by her son, spent a few weeks at the home of Mr. A. Soon after returning home both contracted typhoid fever.

In the latter part of 1912 or January, 1913, Mr. H., a brother of E., spent a night at the home of Mr. A., and twelve days afterward came down with typhoid fever.

In June, 1913, Miss I., a niece of Mr. A., living near him, suffered from typhoid fever. There had been frequent visiting between the two families.

On or about Oct. 15, 1913, Mr. J. took the Reverend K., his wife and two children to the home of Mr. A. for a visit. They did not take a meal at the house, but the children became hungry and cookies were handed. October 28, the Reverend K. bought butter from Mr. A for table use, and on November 2 Mr. A. and family dined at the home of the Reverend K. On November 11 the two children of the Reverend K. became ill with typhoid fever, and on November 30 Mrs. K and her husband also went down with the disease, Mrs. K. dying.

It thus appears that twenty-one cases of typhoid fever occurred among persons in this community, or those who had visited there, and all of them had been in contact for longer or shorter periods of time with Mr. A.

These facts were called to my attention in June, 1913, and the circumstances were so suspicious that I advised doing Widal tests on the family of Mr. A. Mr. A. himself and one son gave positive reactions. We then shipped tubes of bile to the health officer of the town, asking him to inoculate them with the urine and feces from these two persons. Examination of these tubes showed the presence of typhoid bacilli in the urine of Mr. A., but not in the feces. Subsequent examinations have confirmed this finding. Even after treatment with hexamethylenamin for a considerable period of time the typhoid bacillus can still be isolated from the urine of Mr. A. with a considerable degree of regularity.

In the fall of 1913 Dr. Fred Johnson was appointed deputy state health officer, and since that time the field work on this case has been under his charge, and he has collected a number of specimens for examination.

In considering this run of cases of typhoid fever the question may well be asked, With what degree of certainty can the origin of these cases be traced to Mr. A.? In a few of them, as for example Mr. H., who spent a single night at the home of Mr. A., and of Miss I., who had simply visited, the exposure seems to have been very slight, and it is hard to state with any degree of certainty that the disease was contracted from Mr. A. The period of incubation in the case of Mr. H. was unusually short, although not shorter than has been noted in a number of cases. In the case of Mr. D. the exposure also seems to have been slight. The exposure of the Reverend K. and his family appears to have been sufficient, especially in view of the purchase of butter prepared at the farm, and the period of incubation was such that it is not going far out of the way to connect these cases directly or indirectly with Mr. A.

It must be noted also that all of these patients with the exception of Miss I. are known to have taken food served at the house, and on account of frequent visits it is almost certain that Miss I. had also had food there.

Every effort has been made to exclude other sources of infection. The water-supply of the town of G. was examined and found to be above suspicion. There was no typhoid fever in this community except among those persons who had been in contact with Mr. A. Admitting that a few of these cases are doubtful, it is nevertheless reasonable to conclude that a great majority of them were infected directly or indirectly from Mr. A.

RATIONALE OF THE USE OF ANTISEPTICS AND GERMICIDES IN INFLAMMATIONS OF THE MUCOUS MEMBRANES *

MARSH PITZMAN, M.D.
ST. LOUIS

This paper concerns itself with the question why antiseptics and germicides influence favorably the infections of the mucous membranes. The simplest answer, the one accepted for several decades almost as gospel, is that antiseptics or germicides gradually kill off the bacteria and so terminate the infection. Of course, one can use or misuse an argument at will so long as the world is with one, but the thinking element of the medical profession has become skeptical. Once the bacteria lie in the depths of the tissues, except as to be noted later, a great mass of honest experimental work has shown that it is impossible to reach them with our antiseptics or germicides as used in practice. This demonstration accounts for the honest skepticism and growing discontent with the old explanation.

The general surgeons are going through a similar evolution. The belief that the use of a moist antiseptic or germicidal dressing over an infected wound has any direct influence on the course of the infection within the tissues is rapidly losing ground. The progressive surgical opinion of to-day is that in infected wounds a moist saline or water dressing will accomplish all that an antiseptic could without the risk of the occasional bad effects of the antiseptic or germicide.

First, I wish to make sure that we are agreed on the use of terms. A germicide is a preparation that kills vegetative bacteria on true contact practically instantaneously. Spores require especially strong germicides to bring about their instant destruction, such as free chlorin, intense heat, etc., and consequently are not considered in this definition. An antiseptic is an agent which hinders the growth of bacteria. After hours or days antiseptics often kill bacteria, but do not necessarily do so. The German term, *entwicklungshemmend* — development checking — is much preferable for a clear understanding of the meaning.

PROPHYLACTIC USES

One most important use of the germicides is a by-product of medical science of the last decade. I refer to the prophylactic use of germicides on a mucous membrane which has been exposed to infection. Under such circumstances the bacteria are on the surface and theoretically should be killed off by the proper use of a germicide. The strength of solution which should be used to make sure of killing the bacteria, and at the same time do a minimum of injury to the tissues, constitutes an open question for individual experience and judgment. From the points of view, however, of both theory and the literature, I would strongly favor the use of an active germicide and condemn the weaker antiseptics, such as argyrol or collargol, as not being efficient in killing off bacteria. Credé's prophylaxis of ophthalmia neonatorum, I take it, is accepted as being efficient in killing off the gonococcus on the surface and thus preventing the infection. The original 2 per cent. solution is now held to be unnecessarily severe, so that 0.5 per cent. or even weaker solutions have justly come into use.

The prophylactic use of a germicidal injection after exposure to venereal infection from a theoretical point of view is reasonable. Of late this procedure has gained greatly in the number of its adherents. The more recent army reports are favorable to its efficiency in practice. The exact strength of solution opens a field for individual views, though here again weak antiseptics should not be depended on.

Another direct use of germicidal power belongs to the ophthalmologist exclusively on account of the anatomic structure of the cornea. Because of the density of structure and consequent comparatively limited possibilities of blood- and serum-supply, the cornea is comparable to bony tissue. In such tissues the infection tends to remain localized and so theoretically could be blotted out by the use of a germicide Good authority affirms that it works out in practice.

ACTION IN ACUTE INFLAMMATION

Now I venture into the dangerous field of comparison. Let us take up the established surgical principles in dealing with an abscess. Once an abscess has reached such a size that fluctuations can readily be made out, practically always the fluid contents must be discharged before it will heal. When neglected, the pus often works its own way out; more properly the knife hastens its escape. The rational explanation of the healing is that the tissues no longer have to struggle against so great a quantity of toxin and consequently are able to overcome the infection. It has been often directly proved, of course, that a fresh abscess contains toxin in quantity. Many abscesses will heal, no matter in what part they are opened; others refuse to heal until opened at the lowest gravity point; hence the established surgical rule. This, I should consider, would rule out the question of tension, for tension is relieved as well by a high as by a lowest-point incision. The pus with its toxin must drain out of the wound entirely in order to promote recovery. But certain abscesses cannot, on account of their anatomic relations, be drained from the lowest point; such, for instance, are deep collections, or abscesses in certain joint cavities. The accepted surgical procedure there is to insert tubes and continuously wash out the pus with its toxin as soon as formed—some surgeons advocating normal saline solution, others, I believe not improperly, adding weak antiseptics like potassium permanganate or argyrol.

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* Read before the St. Louis Medical Society, April 18, 1914.

* My previous papers on similar topics are: Hyg. Rundschau, 1909, No. 12; Fallacies in the Understanding of Antiseptics and Germicides with Special Reference to Mercuric Chlorid, THE JOURNAL A. M. A., July 23, 1910, p. 308; Am. Jour. Ophth., 1912, xxix, 1.

As a basic principle for these well-recognized surgical procedures, we thus find the continuous removal of the toxin. This checks the poisoning, while the antisubstances of the body bring about the cure. In a nutshell, I should consider the same principles as the basis of the modern treatment of acute inflammation of the mucous membranes. The advantage of the addition of mild antiseptics to the irrigation I accept as established by the clinical experience of many excellent observers. Theoretically these weak antiseptics may well aid in cleansing the membrane, and possibly in preventing further toxin formation in the already excreted serum by their antiseptic powers. Stronger germicides in the acute stages are, according to this argument, not helpful, and inasmuch as they increase the irritation, are distinctly contra-indicated.

ACTION IN CHRONIC CONDITIONS

The great advance in the treatment of chronic mucous membrane inflammations in the past decade is due to an improved recognition of the cause of the chronicity. For example, the cauterization of enlarged turbinates when required, putting an end to a nasal focus, may be all that is necessary to end a chronic conjunctivitis. The massage of the prostate or seminal vesicles may end a most persistent urethral inflammation without other treatment. The gradual dilatation of the lacrimal ducts or urethra may be all that is required to cure otherwise intractable cases. The protection of the eyes against any constant irritation may be the sole help which Nature requires. The dilatation of a ureter, or the removal or drainage of a kidney, may be required to cure a chronic cystitis. The reestablishment of complete bladder drainage in cases of prostatic hypertrophy or of prolapsed bladder in women may be indicated. Further, and greatly to be emphasized, a toning up of the general health will often promote a cure when other measures have failed.

So it is obvious that chronic mucous membrane inflammation can be cured without the use of any antiseptic or germicide. In other words, it is unnecessary to kill off the bacteria within the membrane by germicides in order to obtain a cure. The negative results of the honest experimental work are therefore not so disheartening. The statement that silver nitrate solutions, etc., are good for the treatment of chronic mucous membrane inflammations is therefore only in part true. At times it is surely not a necessity of treatment; at other times the belief in its efficacy causes neglect of other most important measures.

In chronic mucous membrane inflammation, after all is done that can be accomplished along the general lines noted above, some degree of irritative treatment is unquestionably called for in a great percentage of cases, to hasten in some, or in others to bring about a cure. What strength and frequency of irritation, whether the very strong germicides or the weakest of astringents, are questions to be decided on the merits of the individual case. Why do these measures cure? Negatively, I feel strongly that they do *not* act by killing off directly the infecting organism. With this opinion the great majority of progressive specialists, I take it, are in full agreement. The benefit is an empirical observation, what in medicine we are wont to call an alterative action. It probably has several factors, an increased blood-supply carrying fresh antibodies, improved drainage of small pus-pockets, a local stimulus to the proliferation of cells, etc.

Germicides in this usage are a two-edged sword, and must be used in the various types of chronic inflammations with the mind open to possible bad effects. For instance, in the midst of a very dense scar it would obviously be impossible to increase the blood-supply. Further, to decrease the discharge for a time artificially by an astringent does not necessarily mean improvement of the condition. But with intelligent observation they are capable of accomplishing real good.

CONCLUSION

It is thirty-odd years since the beginning of the modern study of bacteria, and of antiseptics and germicides. In the enthusiasm of so great a discovery—one that revolutionized the whole status of medicine—it is not to be wondered at that the powers of antiseptics and germicides were exaggerated—that their limitations were not recognized. The battle for antiseptics and germicides has long ago been won, but it remains for the present day impartially to determine their limitations. Many of the veterans naturally are loath to give up their former positions, whereas many of the younger men feel that the general truth of these limitations is too patent to be of interest for discussion. I wish to emphasize my belief that the rationale back of the use of antiseptics and germicides is a live question in theory—one whose answer must have an influence in practice.

Wall Building.

"Pylorospasm".—The "pylorospasm" of the roentgenologist is not the well-recognized pylorospasm of the clinician. Most roentgenologists in writing about the bismuth residue which occurs so frequently in pyloric and duodenal ulcer, speak of "pylorospasm" as if it were a fact and not a theory. Case, for example (*Jour. Michigan State Med. Soc.*, November, 1913), says "When the meal is larger, delayed pylorospasm may be set up and a small residue remaining longer than six hours may result." Of course, the converse is the true statement: "When the meal is larger, a small residue may remain longer than six hours, and this we assume to be due to pylorospasm." Roentgenologists habitually diagnose pylorospasm when they find a six-hour residue in a highly acid stomach showing clinically no signs of pylorostenosis. They know, however, that it cannot be true. Firstly, in the great majority of cases they can press this bismuth through the pylorus into the duodenum by effleurage with the hand or with the distinctor of Holzknecht. Secondly, a jet of bismuth water will often dash through the pylorus into the duodenum although the residue remains. Most important of all, I have often passed the large Gross duodenal tube through the pylorus in these cases without any difficulty (Lippman, C. W.: Simplification of the Duodenal-Tube Examination, THE JOURNAL, March 21, 1914, p. 911). I have even passed the tube while the six-hour residue was in the stomach in a few cases. Certainly a pylorus which allows a large lead ball to pass is not inclined to pylorospasm. It seems to me that the residue is due to the sinking of the bismuth in the excessive fluid secretion which is so often associated with gastric and duodenal ulcer cases. Most of the men believe that the residue is due to pylorospasm plus hypersecretion, but in consideration of the facts mentioned above, I believe that pylorospasm in its pure clinical sense is a negligible factor in the ordinary case with a six-hour residue.—C. W. Lippman, M.D., San Francisco, St. Francis Hospital.

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SATURDAY, JUNE 27, 1914

On account of the large amount of space occupied by the index in this issue of The Journal, certain departments have been omitted entirely and others abbreviated.

THE INDEX

This issue of The Journal contains the index to the current, or sixty-second, volume of The Journal, including the current medical literature which has been listed from week to week. The Index contains references to original articles in over two hundred of the leading medical journals of the world, including those of the principal foreign countries.

The Index consists of two parts — an author and a subject index. Under "Authors" appear the names of all who have contributed articles to The Journal or to any other medical journal listed in the current literature, as well as the names of those whose papers are abstracted in the medical society reports in The Journal. Under "Subjects" will be found complete references to all reading-matter in The Journal and references to the original articles in all domestic and foreign journals listed, arranged under the subject of the article with double entry when necessary and with numerous cross-references to facilitate the use of the Index. The figures in bold-faced type refer to reading-matter in The Journal.

The "Guide to Current Medical Literature," under which title the Index appears in pamphlet form,[1] contains, in addition, the titles of the articles listed, arranged chronologically and by journals, as in the Current Medical Literature Department. It is issued in separate form for convenience—to make it unnecessary to handle the bound volume of The Journal.

Just preceding the Index a list of the journals indexed during the past six months is given. Any foreign journal, except those starred, will be lent by The Journal to subscribers and members in the United States with the understanding that it will not be held over three days. Requests for journals should be addressed to the Library of the American Medical Association and six cents in stamps should be enclosed. This covers the average expense of mailing a journal. The addresses of the domestic journals are given, and these can be obtained direct from the publishers. No domestic journal will be lent, as these can be obtained direct from the publishers as easily and as quickly as from us.

DISINFECTION AFTER CONTAGIOUS DISEASES

Advances in our knowledge of the way in which disease is spread are continually influencing our methods of combating infection. An instance of this is best seen in the importance which the living carrier of infection is assuming in the minds of public-health officials, as contrasted with the relative unimportance of inanimate objects or fomites. The question has its distinctly practical side. Given a certain sum of money for combating disease, how can it be most profitably expended? The most fruitful sources of infection should plainly be attacked first, while those of lesser significance may be made to wait for more ample resources or until more vital matters have been successfully dealt with. If the neighborhood of a disease-germ carrier is highly dangerous to uninfected persons, while the inanimate objects with which he comes in contact are not likely to convey disease, this fact should be known in order that our efforts may be directed where they are likely to be most effective. We have no wish to expend any energy fighting windmills.

It is not always easy, however, to secure evidence of the relative efficiency of different methods of combating disease. At present some attempts are being made to study the value of terminal disinfection and to determine what our efforts in this direction are actually accomplishing. It is essential that we know just what the facts are.

Large sums of money have been and are being spent by city health departments in disinfecting rooms after cases of infectious diseases. The custom has in its favor the weight of opinion and the sanction of long tradition, but its efficacy in preventing the spread of infection is now being seriously questioned by some experienced health officers. Every one will admit the theoretical possibility that, in a room once occupied by a patient or convalescent, specific disease germs may remain long enough to endanger its subsequent occupants. Whether disease is actually disseminated by this method is another question, and one that can be settled only by experience. Our knowledge of the life-history of pathogenic bacteria outside the body, while far from complete, is at least sufficient to show that differences exist and that conclusions drawn from observations on one disease cannot be indiscriminately applied to others.

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[1] The Guide to Current Medical Literature may be obtained from the Association office at 50 cents a copy.

One method of determining the value of room disinfection in preventing the development of fresh cases of infection is to compare the number of cases arising in households after room disinfection with that of cases originating in the absence of such disinfection. Such a comparison has been made by Chapin[1] of Providence, R. I., with instructive results. Two diseases are considered, diphtheria and scarlet fever. In Providence, a city of about 235,000 inhabitants, "living for the most part in dwellings with tenements or apartments for two to six families," terminal disinfection after scarlet fever was discontinued after 1908. A comparison is thus permitted between a disinfection and a no-disinfection period. Cases occurring in the immediate family within sixty days after the termination of isolation were considered recurrences. During the years 1904-1909, when room disinfection was practiced, scarlet fever developed in 2,428 families with 36 recurrences, a percentage of 1.48; during 1909-1912 (no-disinfection period), there were 1,704 infected families and 26 recurrences, a percentage of 1.53. A similar comparison for diphtheria gave a percentage of recurrences of 1.71 in 1,457 infected families after disinfection and 1.75 in 3,658 families during the period of no disinfection. The same conditions are shown by a similar comparison of the number of cases developing among susceptible persons, mostly children, who had been sent from home during the progress of the disease and returned at the end of the isolation period.

"Between 1889 and 1904, 1,013 persons, mostly children of school age, returned to their homes following disinfection after diphtheria. Of these, nine, or 0.88 per cent., contracted the disease. Since the beginning of 1905, 836 persons, mostly children, have returned to their homes where there had been no disinfection. Of these, seven, or 0.84 per cent., contracted diphtheria. Of these, five were in 1912. Of 1,659 persons who had never had the disease, thus returning to disinfected houses after scarlet fever, twelve, or 0.72 per cent., developed scarlet fever. Of 284 persons thus returning where there was no disinfection, three, or 1.05 per cent., contracted the disease."

These results, taken as they stand, are thought by some to indicate that the costly and time-consuming practice of house disinfection has little or no influence on the spread of infection in diphtheria and scarlet fever. While this is in accord with recent observations on the importance of carriers and missed cases, further investigation of this important question is plainly to be desired.

The recent action of the Department of Health of the City of New York[2] in discontinuing fumigation after diphtheria and measles may be noted in this connection. After room disinfection following diphtheria was abandoned, the practice of taking the bedding to a disinfection station for sterilization was continued; but more recently this procedure also has been dispensed with. Fumigation after scarlet fever is still carried out by the New York Health Department, though the statement is made that the number of secondary cases occurring even in the families directly exposed "is surprisingly small."

Many investigators believe that the life of most disease germs outside the body is very brief and that the danger from inanimate objects or fomites is therefore in most cases slight. Each disease, however, must be studied with reference to its own mode of spread. It does not follow that, because room disinfection appears to some observers of little or no value after diphtheria, scarlet fever or measles, it is also to be abandoned after pulmonary tuberculosis and small-pox. At least one definite conclusion seems justified: many public-health measures are still on an experimental basis and, like any other similar procedure, must be judged by their outcome. Analogy and tradition are not safe guides.

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[1] Chapin: The Medical Officer, 1913, ix, 218.

[2] Bull. Dept. of Health, City of New York, 1913, iii, 175.

ACIDITY, EDEMA AND NEPHRITIS

The controverted theories of edema and nephritis proposed by M. H. Fischer[1] have awakened considerable clinical interest because of the practical recommendations which have been based on them. Broadly speaking, Fischer's view is that increased acidity is the fundamental cause of most forms of edema, and of all forms of nephritis and albuminuria. The conclusion rests primarily on certain simple experiments on the swelling of fibrin, gelatin plates, fragments of tissue, etc., in alkaline and acid solutions. In these experiments Fischer has observed, in all cases except when very dilute acid was employed, an influence of acidity in increasing the colloidal swelling of these protein substances in the solutions in which they were immersed. From this he concludes, in essence, that acidity may be the cause of colloidal swelling in the body.

Various writers have taken issue with this assumption since it was first presented.[2] The most recent and perhaps most convincing criticism has come from the chemical laboratory of the Massachusetts General Hospital in Boston.[3] This points out what has been emphasized before, namely, that nowhere in the living body (except in the gastric juice in which the swelling of protein in acid is indeed a factor of importance) has a single instance been detected of such acidity of reaction as occurred in Fischer's fundamental experiments. On the other hand, even in his own trials, no significant swelling — the index of the edematous state — ever occurred with acidities represented by a hydrogen-ion concentration of less than 0.0005 normal. The highest acidity of the urine ever reported, however, expressed in these terms, is less than 0.00003 normal hydrogen-ion concentration, and only very rarely indeed does this value exceed 0.00001 normal, even in severe acidosis. These figures for the urine are, in turn, at least one hundred times larger than those for the blood in extreme acid intoxication.

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[1] Fischer, M. H.: Oedema, New York, 1910; Nephritis, New York, 1912. See also editorial, A Controverted Theory of Nephritis, THE JOURNAL A. M. A., June 20, 1914, p. 1971.

[2] Compare Gies, W. J.; Rosenbloom, J.; Weinberger, W.; Oltenberg, R., and Mosenthal, H.: Edema, Biochem. Bull., 1912, i, 270. Fischer, M.: A Response to Some Criticism of the Colloid-Chemical Theory of Water Absorption by Protoplasm, ibid., 1912, i, 444. Gies, W. J.: Further Comment on Fischer's Theory of Edema, ibid., 1912, i, 461. Moore, A. R.: Fischer's Theory of Edema and Nephritis, THE JOURNAL A. M. A., Aug. 10, 1912, p. 423; Edema and Nephritis: Further Experiments Proving the Invalidity of the Colloid-Chemical Theory, ibid., Feb. 1, 1913, p. 345.

[3] Henderson, L. J.; Palmer, W. W., and Newburgh, L. H.: The Swelling of Colloids and Hydrogen Ion Concentration, Jour. Exper. Pharmacol., 1914, v, 449.

In a series of new experiments, L. J. Henderson and his colleagues[3] have now shown that there never is the slightest measurable influence of variation in hydrogen-ion concentration, within the ranges known to occur in the body or even in the urine, on the colloidal swelling of such substances as Fischer used in his experiments. All instances in which colloidal swelling has been observed as a result of acidity are cases in which the acidity is greater than any concentration of ionized hydrogen known to occur in the body.

Fischer has pointed out, in confirmation of his theory of edema as based on the colloidal swelling of proteins in acid, that edema actually is known to occur in certain conditions attended with an increased production of acid in the body. It is, however, far from true that, as a rule, a tendency to an abnormal accumulation of acid is accompanied by edema. A normal acidity of low degree is a very common pathologic phenomenon.[4] It is usually quite independent of any known disturbance of the water equilibrium of the organism. Hence the Boston investigators remark that it is utterly fallacious to assume that any causal significance attaches to the frequent tendency in edema toward the occurrence of acidity. The tendency to either high or low acidity may be associated with the presence or the absence of edema.

Again, according to Fischer, albuminuria and nephritis are characterized by colloidal swelling and dissolution of renal tissue through the action of the increased acidity or tendency to acidity which is the alleged essential factor in the disease. From this he concludes and recommends that the entire purpose of our therapy in the relief of the acute nephritides must be "to get alkali into the patient in order to neutralize the acids present; to get salt into him to aid in the reduction of the edema of the kidney (and other organs); and finally, to give him water in large doses at regular intervals in order to have 'free' water available for urine." For these purposes it is advised to administer either by mouth or by rectum, or even intravenously, properly concentrated solutions of sodium carbonate and sodium chlorid. Against this, Henderson, Palmer and Newburgh have offered a protest, insisting that the medical treatment which is founded on this view is both harmful and productive of human suffering. They point out that although it is true that there is an increase in the hydrogen-ion concentration in the urine in nephritis, it is also true that a similar increase is shown in many other diseases in which neither nephritis nor albuminuria occurs. There is no known connection between the hydrogen-ion concentration of the urine and its protein content. It is possible to make the urine alkaline without effect on the concentration of protein, and albuminuria may even be caused by the ingestion of sodium bicarbonate. Either in the presence or in the absence of edema the administration of this alkali may be followed or not followed by diuresis.

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[4] Palmer, Walter W., and Henderson, Laurence J.: Clinical Studies on Acid Base Equilibriums and the Nature of Acidosis, Arch. Int. Med., August, 1913, p. 153.

Current Comment

ASSOCIATION PROCEEDINGS

It has been the custom to publish a part of the minutes of the Annual Session of the Association in The Journal the week of the meeting. This year no attempt is made to follow the previous custom, for two reasons: first, this issue being the Index Number, there would be space for only a small part of the minutes; second (and the main reason), this is the last number of the volume, and if part of the minutes were printed here and part in the next issue, they would appear in two different volumes, which would be awkward for future reference. The complete report of the proceedings will appear next week.

RECENT FINDINGS CONCERNING GLANDERS

It is sometimes quite as important to record failures as to proclaim the promise of success when some new procedure is introduced in medicine. For this reason we may refer to the tentative conclusion of the Bureau of Animal Industry[1] that the attempted methods of immunization of horses with glanders vaccine have given unsatisfactory results in the hands of the government pathologists. The dangerous character of glanders and the possibility of its transmission to man render every effort to control and eradicate this disease in horses of interest and importance to the physician as well as to the veterinarian. When artificially infected, the vaccinated animals showed no resistance. For the present, therefore, we are warned by the Washington Bureau that it seems advisable to abstain from immunizing horses by this method, as a practice of this kind may do more harm than good. Owners having horses which are supposedly immunized would naturally become careless, thinking their animals were resistant to the disease, and thus even a better opportunity would be offered for the propagation of the disease than if the horses were not vaccinated. Furthermore, the fact that the blood of vaccinated animals cannot be utilized for serum tests for two or three months after the injections is also a great disadvantage in the eradication of the disease. As a result of this preliminary work it appears that the control and eradication of glanders must still depend on the concentration of our efforts to eliminate infected horses and to adopt proper precautions against the introduction of infected animals into stables free from the disease. The results achieved in Germany, Austria and Canada by these methods have proved very encouraging, and no doubt if executed in the same spirit in this country a marked reduction in the number of cases of glanders would result.

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[1] Mohler, J. R., and Eichhorn, A.: Immunization Tests with Glanders Vaccine, Bull. U. S. Dept. Agric., 1914, No. 70.

PUBLIC EDUCATION BY UNIVERSITIES

A striking illustration of the changing conditions in educational ideas may be found in the growing appreciation on the part of leading universities of their responsibility to the public. In former generations a university was regarded as a thing apart, and a college professor was looked on, not only by the humorous paragraphers of the newspapers, but also by the mass of people, as a man living in a world of ideas, without any connection with practical affairs. To-day our leading universities are recognizing not only the opportunity, but also the duty of making available their knowledge for the benefit of the masses. This tendency is highly commendable, especially in the field of public health and prevention of disease. The Harvard Medical School has a standing committee on public lectures which arranges each year for a course of Sunday afternoon talks by members of the faculty. These talks are open to the general public and are on topics of general interest. For instance, last year the course of twenty lectures included such topics as "Preventive Medicine in Relation to Industrial and International Concord," "The Care and Feeding of Young Children," "What the State Board of Health is Doing to Protect the Health of Its Citizens," "The Dangerous Effects of Patent Medicines" and "The Preservation of the Natural Teeth." This year's course includes talks on "Rational Baby Feeding," "Bodily Effects of Rage and Fear," "Spectacles and Eye-Glasses, Their Use and Abuse," and other subjects of practical interest. The lectures given in the past have proved of value and so popular that they are now being issued in little pocket-sized volumes at popular prices under the title of "Harvard Health Talks." In Minnesota the daily press is cooperating in the same kind of work. A series of articles on disease and its prevention by Dr. E. P. Lyon, dean of the University of Minnesota Medical School, recently appeared in the Minneapolis *Journal*. The University of Missouri is one of the few state universities that has recognized the growing tendency by the organization of a distinct department on public health. A series of bulletins for public reading and distribution are being issued. The five so far completed are on "Bacteria and Disease," "The Prevention of Typhoid Fever," "The Prevention of Contagious Diseases in Schoolchildren," "Resuscitation" and "The Relation of Sight and Hearing to Early School Life." Each of these universities has apparently worked out its plans in accordance with the needs of its own particular field. In Boston, popular Sunday afternoon lectures; in Minnesota, newspaper articles, and in Missouri, pamphlets on specific subjects seem to meet existing conditions. The significant fact, apparent in each of these cases, however, is that our universities are recognizing their responsibilities to the public and are making serious, intelligent and practical efforts to meet them.

Medical News

ALABAMA

Monthly Health Bulletin.—Dr. H. N. Rosser, Birmingham, health officer of Jefferson County, announces that he will hereafter issue a monthly report, showing the diseases in the county and the death causes.

Aid Needed for Free Clinic.—It is announced that unless financial aid is forthcoming immediately the free clinic at the Hillman Hospital, Birmingham, will be obliged to suspend. A commitee of physicians has waited on the commission to request an appropriation.

Personal.—Dr. Gaston J. Greil, Montgomery, has been reelected chairman of the executive committee of the Montgomery Anti-Tuberculosis League.——Dr. Andrew Howard Ryan has been appointed full-time assistant in the department of physiology, and Dr. W. A. Clark, assistant professor of anatomy in the University of Alabama, Mobile.——Drs. Charles M. Rudulph, James S. McLester and Arthur F. Toole, all of Birmingham, have been appointed a committee to investigate the extent of mental defectiveness in the state, and to make a report to the legislature for the purpose of obtaining an appropriation for the establishment of a state institution for the treatment of these unfortunates.

CALIFORNIA

Dedication at Children's Hospital.—The open-air porch erected by the teachers of San Francisco at the Children's Hospital as a tribute to Mary Agnes Deane was dedicated with impressive ceremonies, May 25.

Leprosarium on San Clementi Island.—A bill providing for a national sanatorium for lepers is now pending in the House of Representatives. Dr. Edmund O. Sawyer, Los Angeles, health officer of Los Angeles County, is strongly advocating the selection of San Clementi Island as a site for the institution.

Personal.—Dr. Karl F. Meyer has been made professor of bacteriology and protozoology in the University of California. Dr. Meyer's special field of work is tropical diseases.——Dr. Frank B. Carpentier was assaulted by two men in his office in San Francisco, June 9, who attempted to rob him, but were frightened away before succeeding.——Dr. Walter B. Hill, Long Beach, charged with being responsible for the tragedy in which Mrs. Fred Raab killed herself and two children, was fully and completely exonerated by the coroner's jury, June 5.

CONNECTICUT

Centennial of Yale Medical School.—The one-hundredth anniversary of Yale Medical School was celebrated in New Haven, June 15. Special exercises were held on that day in Woolsey Hall, at which addresses were made by Dr. Walter Ralph Steiner, Hartford, on "The Evolution of Medicine in Connecticut, with the Founding of Yale Medical School as Its Notable Achievement," and by Dr. William Henry Welch, Baltimore, on "Pre-Medical Studies in Relation to General Professional Training." Two commemorative volumes are to be published: "The Life and Letters of Nathan Smith," the founder of Yale Medical School, and a special number of the *Archives of Internal Medicine* devoted to articles by graduates of that institution.

Alumni Meeting.—At the thirty-fifth annual meeting of the Yale Medical Alumni Association held in New Haven, June 5, Dr. Seymour L. Spier, New Haven, was elected president; Drs. E. Terry Smith, Hartford; William J. Sheehan, New Haven; Frank L. Phillips, New Haven, and Donald Russell, Wallingford, vice-presidents; and Dr. Marvin M. Scarbrough, New Haven, secretary and treasurer. At the alumni banquet it was announced that pledges had been obtained for the new endowment of the New Haven General Hospital, as follows: for the erection and equipment of a laboratory, $125,000; for the endowment of the hospital, $500,000, and for the endowment of the medical school, $1,100,000, making a total of $1,725,000. Of this amount, $400,000 was donated by members of the Lauder family of Pittsburgh and Greenwich, Conn., and will be known as the Anna M. R. Lauder fund, in memory of Mrs. George Lauder. It is stipulated that a sufficient amount be set aside for the endowment of a public health department, to be known as the "Anna M. R. Lauder Chair of Public Health."

ILLINOIS

Anti-Tuberculosis Clinic Opened.—An antituberculosis cinic has been established in Jacksonville. It was opened for the first time June 9, and it will receive patients from 10 a. m. until noon each Tuesday and Friday.

Memorial Hospital Opened.—The Huber Memorial Hospital, Pana, erected at a cost of $100,000, through the beneficence of the late Dr. Jacob Huber, was thrown open June 13 for the reception of patients. It is a four-story brick and stone structure, is well appointed and thoroughly equipped.

Sanitary Survey of Summer Resorts.—The State Board of Health, with the approval of the governor, has begun a sanitary survey of the summer resorts of the state, which are charged with being responsible for a large proportion of the typhoid cases which exist in the late summer months.

To Investigate State Health Conditions.—At the request of the efficiency and economy committee of the Illinois legislature, P. A. Surg. Richard H. Creel, U. S. P. H. S., is to make an investigation of the sanitary condition of the state and laws under which it is carried on. Surgeon Creel's report is to be made the basis of the recommendation of the committee to the legislature at its next session.

Personal.—Drs. Charles B. Voigt, Mattoon; Londus Brannon, Joliet; Dr. and Mrs. James F. Percy and Dr. and Mrs. Edward C. Franing, Galesburg, have sailed for Europe.——Dr. Jay T. Wood has been elected city physician of Springfield, and Dr. Richard D. Gugan, Illiopolis, physician of Sangamon County.——Dr. and Mrs. Louis J. Frederick, Joliet, have returned from abroad.——Dr. Edgar Hugh Little has been appointed postmaster of East St. Louis.

Chicago

Memorial to Dr. Quales.—The Scandinavian-American Medical Society of Chicago, at its meeting June 11, adopted resolutions regarding the death of Dr. Niles Theodore Quales, setting forth the sentiments of admiration and respect with which his memory was cherished, and extending sympathy to his bereaved wife and family.

Senn High School Dedicated.—The Nicholas Senn High School at Glenwood and Ardmore Avenues was formally dedicated, June 15. Various phases of the life of the "Master Surgeon" for whom the school is named were spoken of by Drs. William A. Evans, P. J. H. Farrell and Truman W. Brophy. An address was also delivered by Ella Flagg Young. A bronze bust of Dr. Senn, which had been presented to the school, was unveiled by Dr. Farrell and was accepted by C. A. Peterson on behalf of the board of education.

Personal.—Dr. Charles W. Leigh, who was in Rochester, N. Y., for the meeting of the American Association of Milk Commissioners, was seized with appendicitis soon after his arrival, removed to the Rochester General Hospital, and operated on. He is reported to be doing well.——Dr. Stephen R. Pietrowicz, formerly superintendent of the Dunning institutions has been appointed a member of the school board.——Dr. and Mrs. Robert H. Buck, Sara Craig Buckley and daughter, and Dr. George H. Miller and family have sailed for Europe.

INDIANA

Site for Tuberculosis Hospital.—Ninety acres of farm land have been bought by Marion County as a site for its tuberculosis hospital, and a committee has been appointed to secure plans for the institution.

Dedication Day Changed.—The dedication day of the St. Francis' Hospital, Beech Grove, which was to have been June 25, has been changed to July 5. It will not be ready to receive patients for several weeks.

Disease Prevention Day.—October 2 has been selected as the date for the observance of disease prevention day throughout the state. The governor is said to have agreed to issue a proclamation regarding the observance of this day.

Colored Physicians Organize.—The Crescent City Medical Society, composed of colored physicians, was organized recently in Evansville, and the following officers were elected: president, Dr. Jeremiah Jackson; secretary-treasurer, Dr. H. R. Thompson.

Donates Site for Colony.—Mrs. George F. Flick has agreed to give the Fort Wayne Anti-Tuberculosis Society a tract of land near the Flick home on which to establish a tent colony for tuberculosis.——On flower day at Fort Wayne, $2,000 was secured for the antituberculosis work by 100 young girls who sold flowers.

Condemnation of Water-Supply.—The water-supply of Madison and that of Bloomington has been condemned by the State Board of Health. At Bloomington, where the State University is located, the situation is so serious that the governor is said to have stated that he would remove the university unless a better water-supply was assured.

Personal.—Drs. James H. Taylor and Horace R. Allen, Jr., Indianapolis, have been seriously ill with pneumonia.——Members and employees of the Indianapolis Health Department gave a thirty-second-degree masonic watch charm to Dr. Mavity J. Spencer, who retired as president of the board June 1. The presentation speech was delivered by Dr. T. Victor Keene.——Mrs. Eva M. Diven, wife of Dr. Charles E. Diven, Anderson, died from pulmonary tuberculosis, June 15.——Dr. William Venable, Carmel, was thrown against a telephone pole in a runaway accident, recently, and seriously injured.

IOWA

Personal.—Dr. James R. Guthrie, Dubuque, dean of the College of Medicine of the University of Iowa, Iowa City, was presented with a loving-cup by his former students, June 17, on the completion of his twenty-fifth year as a member of the faculty of the College of Medicine.——Dr. M. Nelson Voldeng, superintendent of the Cherokee State Hospital, has been appointed superintendent of the recently erected Iowa Epileptic Colony.——Dr. George Donohue, Knoxville, has been appointed superintendent of the Cherokee State Hospital, in place of Dr. Voldeng.——Drs. Ernest S. Heilman, Idagrove; W. Eugene Walcott, Merrill, and David S. Fairchild, Jr., Clinton, have started for Europe.

KANSAS

Personal.—Dr. Arthur J. Anderson, Lawrence, was elected president of the State Board of Medical Examiners at its meeting at Kansas City, June 10.——Dr. J. Edward Graf, Assaria, who was operated on recently at St. Barnabas' Hospital, Salina, is reported to be convalescent.——In the suit of Walter Duckett in the Wyandotte District Court against Dr. Jefferson A. Davis, Kansas City, in which $25,000 damages was claimed on account of alleged malpractice, the jury returned a verdict in favor of Dr. Davis, June 10.

MAINE

Personal.—Dr. Wyvern A. Coombs, a member of the staff of the Central Maine General Hospital, Lewiston, as a result of a competitive examination, has received an appointment as a member of the staff of the Boston Floating Hospital.

State Association Meeting.—The sixty-seventh annual meeting of the Maine Medical Association was held in Portland, June 10-12, under the presidency of Dr. William C. Peters, Bangor. The following officers were elected: president, Dr. Herman L. Bartlett, Norway; vice-presidents, Drs. Albert L. Stanwood, Rumford Falls, and Leander A. Dascombe, Scowhegan; secretary, Dr. John B. Thompson, Bangor (reelected); and treasurer, Dr. Edwin W. Gehring, Portland (reelected).

Eye and Ear Specialists Meet.—The annual meeting of the Maine Eye and Ear Association was held in Portland, June 10. The following officers were elected: president, Dr. Elmer E. Brown, Bangor; vice-president, Dr. Frank Y. Gilbert, Portland; and secretary-treasurer, Dr. Erastus E. Holt, Jr., Portland.

MARYLAND

Personal.—Dr. Hugh H. Young, Baltimore, has been elected first vice-president of the Alumni Association of the University of Virginia. At the recent meeting of the American Medico-Psychological Association held in Baltimore, Dr. Young was elected an honorary member of the association.——Dr. William L. Smith, who has been critically ill at his home at Riderwood, is slightly improved.

Reorganization in Health Department.—The reorganization in the Health Department of Baltimore as a result of the investigation made recently by the United States Public Health Service and a similar investigation now under way by the Bureau of Municipal Research is expected to lead to the abolishment of the present system of having twenty-four health wardens, one for each ward in the city. They will be succeeded by a corps of sanitary inspectors, whose duty it will be to keep the city free from nuisances and to keep yards, cellars and alleys clean. It is contended that physicians cannot be expected to give their whole time and attention to the Health Department matters on the salary of $900 a year now paid them.

MINNESOTA

Health Survey.—Dr. Carroll Fox, U. S. P. H. S., has been detailed to make a survey of health conditions of Minnesota, and to recommend any changes in the system that he may find advantageous.

Promotions in Faculty.—At the commencement exercises of the University of Minnesota, June 11, associate professors Harold E. Robertson and Richard E. Scammon were made professors, and assistant professor Fred W. Schultz was made an associate professor in the medical school.

Tuberculosis Items.—Cottonwood and Noble counties, through their commissioners, have joined the group of counties which purpose to erect a tuberculosis sanatorium for southwestern Minnesota. Worthington and Slayton have been suggested as locations for the sanatorium.——Work on the service building of the State Sanatorium, Walker, is now well under way. The building will contain dining-room, kitchen, laundry, etc. Excavation has been commenced on the general assembly hall and children's pavilion.——The new tuberculosis building of the St. Paul City and County Hospital was turned over to the board of control by the contractors, May 23.

Personal.—Dr. Edward S. Judd, Rochester, sustained painful burns on the face and hands from carbolic acid, June 15.——Dr. Arthur F. Kilbourne, superintendent of the Rochester State Hospital, was the guest of honor at a reception tendered him by the staff and employees of the hospital, June 11, on the occasion of the twenty-fifth anniversary of his connection with the institution as its superintendent. Dr. Kilbourne was presented with a gold watch, chain and masonic charm.——Dr. Justus Ohage assumed his duties as health officer of St. Paul, June 8.——Dr. Gustav A. Renz has been appointed assistant health officer of St. Paul.——Dr. Thomas Gratzek, St. Paul, has been appointed deputy coroner of Ramsay County.——Dr. Howard Lankester, retiring health officer of St. Paul, was presented with a gold-headed cane, and Assistant Health Officer Paul E. Cook with a leather traveling-bag by employees of the health department, June 1.——Dr. Carl J. Ringnell, wife and daughter, Minneapolis, and Dr. James W. Andrist, Owatonna, have started for Europe.

MISSOURI

County Helps in Tuberculosis Fight.—Buchanan County has authorized the appropriation of $2,500 to be expended by the Buchanan County Society for the Prevention of Tuberculosis for the purpose of carrying on its fight against this disease in the rural districts.

Personal.—Dr. George P. Pipkin, at present superintendent of the City Hospital, Kansas City, will assume charge of the Kansas City General Hospital, July 15, on the retirement of Dr. Rush E. Castelaw.——Dr. James B. Wright, Trenton, has started for Europe.

State Takes Over Sanatorium.—The recently completed infirmary building of the Missouri State Sanatorium for the Treatment of Incipient Tuberculosis, Mount Vernon, recently erected at a cost of $35,000, was formally turned over to the state by the contractors, June 6.

St. Louis

Invalid Home Opened.—The Jewish Home for Chronic Invalids and Consumptives of St. Louis, Fee-Fee Street, Anglum, Mo., was opened to receive patients, June 15. Mr. Louis Renard is president of the institution.

Personal.—Dr. Milton Schaic, formerly superintendent of the Montefiore Home and Sanatorium, Bedford Hills, N. Y., has been appointed medical director of the Jewish Home for Chronic Invalids and Consumptives, Anglum.

NEBRASKA

Personal.—Dr. Clarence B. Foltz, Omaha, who has been ill with scarlet fever, has recovered and resumed practice.——Dr. Fred A. Nelson, Omaha, was painfully injured in a collision between his automobile and a trolley-car, June 10.——Dr. and Mrs. August F. Jonas and Dr. Ernest W. Powell, Omaha, have started for Europe.

Medical Library Moves.—The directors of the Public Library of Omaha have been forced for lack of space to request the Douglas County Medical Society to remove their books, now housed in the Public Library. It is expected that arrangements will be made to provide a place near the business center of Omaha, where the books and publications may be available for reference.

NEW YORK

New Officers.—Jamestown Medical Society, June 10: president, Dr. Louis H. Snow; secretary-treasurer, Dr. William M. Sill, Bemus Point.——Medico-Chirurgical Society of Central New York, thirty-seventh annual meeting at Syracuse, June 4: president, Dr. Otis M. Wiley, Syracuse; secretary-treasurer, Dr. Earle A. Gayde, Utica (reelected).

Syracuse Alumni Meet.—At the annual meeting of the Medical Alumni of Syracuse University, held June 9, the annual address was delivered by Surgeon John F. Anderson, U. S. P. H. S., director of the hygienic laboratories, on "The United States Public Health Service; Its Origin; Its Work, and Its Accomplishments." Dr. Michael M. Lucid, Cortland, was elected president.

Personal.—Dr. Oliver W. H. Mitchell has received the permanent appointment as city bacteriologist of Syracuse.——Dr. Charles S. Allen, Rensselaer, gave a reception, June 8, in honor of his ninetieth birthday, which occurred two days before.——Dr. Otto Glogau, Syracuse, has sailed for Europe.——Dr. Wardner D. Ayer, Rensselaer, has succeeded Dr. J. W. Cox as pathologist of the Crouse-Irving Hospital, Syracuse.

State Hospital News.—Governor Glynn has vetoed the bill providing for the abandonment of the State Hospital at Mohansic and a companion bill appropriating $200,000 to begin a new state hospital at another point. This hospital, which is located within forty miles of New York City, on the city watershed, had considerable difficulty with the health authorities of New York City, but finally arranged to dispose of its sewage in a manner satisfactory to the city authorities. It is now hoped that the constructive work of this institution, which has thus been held back, will be permitted to continue.——The New York State Hospital Commission is now considering the purchase of a site comprising 162 acres at Oakside, L. I., for another state hospital. It is feared that opposition to the plan will be encountered on the part of wealthy residents of the neighborhood.

New York City

Cornell Commencement.—The annual commencement exercises of the Cornell University Medical College were held in the Dispensary Hall of the college building, June 11, at 4 p. m.

Hospital to Move.—The Volunteer Hospital, Gold Street, will move about July 1 into its new building on the corner of Water and Beekman Streets. The new building, four stories in height, will be able to accommodate fifty-five patients and has been erected at a cost of about $130,000.

Personal.—Dr. and Mrs. Henry L. Shively and Dr. and Mrs. Archibald M. Campbell have sailed for Europe.——Dr. L. Emmett Holt had conferred on him the degree of D.Sc. by Brown University, Providence, R. I., at its annual commencement, June 17.——Drs. Charles Wuest and George W. Long have been appointed coroner's physicians, vice Drs. Lester D. Volk and Gerard Kasper, resigned.

"Better Baby" Week.—From June 20 to 26 was Better Baby Week in Greater New York, the purpose of which was to plan for the greatest summer campaign yet waged in New York for the reduction of the death-rate among infants and young children. There were special meetings at all the infant welfare centers and 2,000,000 pieces of educational literature were distributed. The mayor has appointed commissions to supervise the work, among them being the Chamber of Commerce, the Merchants' Association, the Advertising Men's League, the Advisory Council of the Board of Health, the New York Board of Jewish Ministers, the Federation of Women's Clubs and the New York Conference on Charities. Mayor Mitchell has been appointed honorary president of the baby week. He has appointed Seth Low as president and eleven honorary vice-presidents have been appointed, together with a committee of fifty well-known citizens on whom will devolve the bulk of the work. In connection with the work of this week Mayor Mitchell has sent a letter to be read before all schoolchildren asking their cooperation in the baby-saving campaign and general instructions as to the care of the baby will be circulated among the schoolchildren.

PENNSYLVANIA

Commencement Week Clinic and Demonstrations.—From June 15 to 17 clinics were held at various hospitals of Pittsburgh by members of the faculty of the University of Pittsburgh School of Medicine and the various hospital staffs, for the benefit of the alumni of the institution, who had returned for commencement week.

Personal.—Dr. William K. Evans has been made chief of the new Health Department of Chester.——Dr. David S. Hollenbeck, the oldest practitioner in Shamokin, on the occasion of his seventy-first birthday, was presented with a gold-headed cane by the Medical Association of Shamokin.——Dr. James T. Macdonald, Bloomsburg, has gone abroad.

Philadelphia

Personal.—Dr. John L. Bower has sailed for Europe.——Dr. Edward A. Spitzkar has resigned as professor of anatomy in Jefferson Medical College.——Dr. John J. Gilbride has been elected assistant professor of surgery in the Medico-Chirurgical College.

Open-Air Clinics Begin.—The fifth season of the open-air clinics on the Chestnut Street pier began June 15. Dr. S. W. Newmayer has charge of the clinic, which is open between 8 a. m. and 5 p. m., the pier remaining open until 10 p. m.

Alumni Picnic.—The Alumni Society of the University of Pennsylvania held its annual celebration at Glenloch Park, N. J., June 4. The society also gave a smoker at the Alamac Hotel, Atlantic City, June 23.

Work of Alumnae.—At the thirty-ninth annual meeting of the Alumnae Association of the Women's Medical College of Pennsylvania, it was announced that a fellowship fund of $500 had been raised and awarded to Dr. Sarah L. Myers, Philadelphia, of the class of 1905; that the Hannah T. Croasdale fellowship now amounts to $1,800; that the Emma E. Musson Scholarship in otology amounts to nearly $700; and that the general endowment fund has almost reached $45,000.

Public Health Sunday.—Fifty-two pulpits of Philadelphia were occupied by members of the American Medical Association, June 21. Among the subjects discussed were the housing problem, milk supervision, segregation of consumptives, the social evil, elimination of occupational diseases, child labor, play grounds, the enactment of more stringent laws governing public health, the relation between morality and health, the prevention of sickness and the prolongation of life.

Medical Club Entertains.—A reception was given by the Medical Club of Philadelphia at the Bellevue-Stratford Hotel in honor of Dr. Victor C. Vaughan, Ann Arbor, President of the American Medical Association; Dr. Edward B. Heckel, Pittsburgh, president of the Medical Society of the State of Pennsylvania; Dr. Enoch Hollingshead, Pemberton, N. J., president of the Medical Society of New Jersey, and Dr. William P. Orr, Jr., Lewes, president of the Delaware State Medical Society. At the conclusion of the reception, Dr. James C. Wilson read a memoir of Dr. S. Weir Mitchell.

RHODE ISLAND

District Society Meeting.—The second annual meeting of the Woonsocket District Medical Society was held in Woonsocket, June 11. The following officers were elected: president, Dr. Joseph T. Roswell; vice-presidents, Drs. J. Edward Tanguay and Allen A. Weeden; secretary, Dr. Edward L. Myers, and treasurer, Dr. Robert G. Reed, all of Woonsocket.

State Society Meeting.—At the one hundred and second annual meeting of the Rhode Island Medical Society held in the Medical Library, Providence, June 4, the following officers were elected: president, Dr. Stephen A. Welch; vice-presidents, Drs. Frank L. Day and Edmund D. Cheesebro; secretary, Dr. Jay Perkins; treasurer, Dr. Winthrop A. Risk, all of Providence. The topic of the president's address was "Surgery of the Gall-Bladder and Biliary Tract." The next meeting of the society will be held in the State Tuberculosis Sanatorium at Wallum Lake, September 6.

SOUTH CAROLINA

New Sanitarium.—A permit has been issued to Drs. James W. Babcock and Eleanora B. Saunders to erect the Waverly Sanitarium, Columbia, to accommodate about 100 patients.

Tuberculosis Hospital to be Erected.—It has been decided to erect a tuberculosis hospital for which an appropriation of $10,000 was made by the last general assembly, on a site of about 70 acres in the State Park, provided the State Board of Health can obtain the consent of the Board of Regents of the State Hospitals for the Insane.

State Board Reelected.—At the meeting of the State Board of Health the following officers were unanimously reelected: president, Dr. Robert Wilson, Jr., Charleston; secretary and state health officer, Dr. James A. Hayne, Columbia; director of the laboratories, Dr. Francis A. Coward, Columbia, and director of rural sanitation, Dr. J. La Bruce Ward, Columbia.

State Red Cross Organized.—The South Carolina Red Cross Nursing Service Commission has been organized and is ready to receive applications for Red Cross nursing service. Applications may be made to Miss M. E. McKenna, the chairman, St. Francis Xavier Infirmary, Charleston, or to the secretary, Miss Agnes Watt, 2001 Assembly Street, Columbia.

Hospital Annex Opens.—The A. Markley Lee Memorial Annex to the Hospital and Training-School for Nurses, Charleston, the cornerstone of which was laid with appropriate ceremonies, December 15 last, has been opened to receive patients. The building is 18 by 60 feet, and two stories in height. The institution is in charge of the Charleston County Medical Association.

Personal.—Dr. Frank M. Durham, Columbia, is now in the Columbia Hospital suffering from knife and razor wounds of the side, cheek and thigh, received from a group of men who assaulted him, presumably with robbery as a motive.——Dr. Margaret L. E. Whiteside has been appointed second assistant physician at the State Hospital for the Insane, Columbia.——Dr. Angus B. Patterson, Barnwell, has been made physician in charge of the branch of the State Hospital, soon to be erected in the State Park.

WISCONSIN

Eye, Ear, Nose and Throat Specialists to Meet.—The first annual meeting of the Wisconsin Eye, Ear, Nose and Throat Specialists will be held at Oshkosh, October 8.

New Sanatorium.—Dr. Samuel B. Ackley, for several years a member of the staff of the Caples Sanatorium, Waukesha, has leased the Rosencranz property on Lac La Belle, Oconomowoc, for a sanatorium.

Personal.—Dr. W. Weber Kelly, Green Bay, Drs. Niel Andrews, Jr., Clarendon Coombs and F. Gregory Connell, Oshkosh, have started for Europe.——Dr. C. C. Crawley, Grand Rapids, has been appointed assistant physician to the Oshkosh State Hospital.

Leper to Remain at Soldiers' Home.—Bernard D. Bennett, who was found to be suffering from leprosy while an inmate of the National Soldiers' Home, near Milwaukee, has been isolated, and is being cared for by another inmate of the home in a house on the grounds of the home.

GENERAL

Travel Tour Abandoned.—The American Association for Physicians' Study Travels has abandoned its tour for this year on account of the magnitude of the proposed trip for 1915. At the meeting of the society in Atlantic City, June 25, the itinerary for next year was discussed.

Millions for Medical School.—By the will of James Campbell of St. Louis, the entire estate, valued at $40,000,000, is eventually devised to the St. Louis University for the establishment and endowment of a medical school and hospital. During the life of his wife and only daughter they will share equally the income of the state. Twenty-one years after the death of the legatees, the entire estate is to go to the university.

Orthopedists Hold Annual Meeting.—The twenty-eighth annual meeting of the American Orthopedic Association was held June 18-20, under the presidency of Dr. Gwilyn C. Davis; clinics being held on the seventeenth. The following officers were elected: president, Dr. George B. Packard, Denver; vice-presidents, Drs. Jefferson D. Griffith, Kansas City, Mo., and William S. Baer, Baltimore; secretary, Dr. Ralph R. Fitch, Rochester, N. Y., and treasurer, Dr. John L. Porter, Chicago.

Personal.—The degree of LL.D. was conferred by Yale University at its two hundred and fourteenth annual commencement exercises on Surg.-Gen. William Crawford Gorgas.——The honorary degree of Ph.D. was conferred on Surgeon-General Gorgas by Princeton University at its one hundred and sixty-seventh annual commencement exercises, June 16.——Dr. John S. B. Pratt, president of the Territorial Board of Health, Honolulu, has reached San Francisco on his way to Washington to protest against the sending of John Early, the leper who recently escaped and was found in Washington, to the Molokai Leprosarium.

Error in Statement Regarding Death of Goldberger.—In The Journal last week in an editorial "The Transmission of Typhus Fever," page 1966, the statement is made "that most of the recent advances in our knowledge of this once dreaded disease have been due to the work of American investigators, although the toll through the loss of life of two of the investigators—Ricketts and Goldberger—has been severe." Dr. Goldberger is still active in the United States Public Health Service. The investigator who died was a coworker, James Francis Conneffe, who succumbed at the age of 33 from typhus fever contracted while investigating the disease.

Climatologists Meet.—The thirty-first annual meeting of the American Climatological Association was held in Atlantic City, June 20, under the presidency of Dr. James M. Anders, Philadelphia. The following officers were elected: president, Dr. Henry Sewall, Denver; vice-presidents, Drs. Arthur K. Stone, Boston, and J. Alexander Miller, New York City; and secretary-treasurer, Dr. Guy Hinsdale, Hot Springs, Va. (reelected). Dr. James M. Anders, Philadelphia, was elected a member of the council, and Dr. Thomas Darlington, New York City, a representative on the executive committee of the Congress of American Physicians and Surgeons. The association will hold its next meeting at San Francisco in 1915.

Bequests and Donations.—The following bequests and donations have recently been announced:

Deaconess Hospital, Peoria, Ill., one-third of an estate of $38,000, by the will of Dr. George McPherson, Tonica, Ill.

New York Skin and Cancer Hospital, $25,000; Society for the Relief of Wives and Children of Medical Men; Children's Aid Society, and Association for Improving the Condition of the Poor, each $10,000, by the will of Dr. Everett Herrick.

Presbyterian Hospital, St. Luke's Hospital, and New York Post-Graduate Medical School and Hospital, each $100,000 by the will of Harris C. Fahnestock.

Johns Hopkins Medical School, a donation of $1,500,000 from the Rockefeller General Education Board, to establish the William H. Welch endowment for clinical education and research.

New York University, a trust fund of $10,000 by the will of Dr. Joseph D. Bryant which is to be "devoted to the instilling in the minds of the senior classes the principles of ethics of the American Medical Association. This bequest is made in the belief that early admonition and planting of preventive means against seductive inclinations and dangers is the surest method of insuring ethical practice in human affairs."

Norwich, New York, Hospital; New York Academy of Medicine, and New York University, each one-seventh of the residuary estate of Dr. Joseph D. Bryant, after the death or remarriage of Mrs. Bryant.

St. Vincent's Hospital, New York City; American Medical Association; Bellevue Hospital Alumni Association Medical Society of New York, and other institutions, equal parts of the daughter's share of the residuary estate of Dr. Bryant, provided the daughter dies before Mrs. Bryant.

A contingent bequest of $10,000 by the will of Dr. Bryant to oppose the antivivisectionists of the State.

Presbyterian Hospital and Philadelphia Home for Incurables, portions of the residuary estate of Mary Ford, valued at $18,000.

St. Joseph's Hospital, Philadelphia, a donation of $5,000 by George W. Nevil, for the endowment of a free bed in memory of Joseph and Amelia Nevil.

Presbyterian Hospital, Philadelphia, $1,000, by the will of Annie E. Claghorne.

To a hospital in Philadelphia, a contingent bequest of $5,000 under the will of Elizabeth Collins. The residue of the estate is devised to the Home of the Merciful Saviour for Crippled Children, on condition that the institution use two buildings at Sea Isle City for the inmates of the Home. If this request is denied, the money is to be divided between the Presbyterian Hospital and the Episcopal Hospital for free beds.

FOREIGN

Not Plague but Pneumonia.—The mysterious and suspicious disease which appeared at Colombian ports, near the Isthmus of Panama, and which it was feared was bubonic plague, has been investigated by Dr. Samuel T. Darling, chief of the Ancon Hospital, and found to be pneumonia.

Prize Awarded to Julliard.—Prof. C. Julliard of Geneva, Switzerland, was awarded the prize founded by the International Congress for Industrial Accidents at Rome in 1909. His subject was "The Functional Adaptability of Limbs Injured in Industrial Accidents and Means to Increase It."

Wellcome Historical Museum Opened.—The historical medical museum of Henry S. Wellcome, on the occasion of the seventeenth International Congress of Medicine, was reopened May 28 as a permanent institution, now known as the Wellcome Historical Medical Museum, and will be open daily from 10 a. m. to 6 p. m. at 54a Wigmore Street, Cavendish, London, England. Members of the medical and kindred professions are admitted on the presentation of their professional cards.

LONDON LETTER

London, June 5, 1914.

The New Edition of the British Pharmacopeia

The last edition of the British Pharmacopeia was published in 1898, and 46,081 copies and 4,525 copies of the Indian and Colonial Addendum have been sold. The work of preparing a new edition has now been completed. One of the chief features will be that limits of impurity in drugs and medicinal chemicals—especially dangerous impurity—will be carefully defined. For instance, at present potassium carbonate containing arsenic will pass the test of the Pharmacopeia of 1898, but it will not pass the 1914 edition, which will limit the quantity to two parts per million. Again, in regard to lead contamination in tartaric acid—the importance of which has been recognized both by the government and by the local authorities—the limit of admixture is prescribed as ten parts per million as compared with a very indefinite limitation before. Another feature of the book is an extension of chemical standardization to drugs not at present standardized, but there is no recognition of physiologic standardization. Notwithstanding the advances that have been made in physiologic methods of testing the strength of drugs—especially of those drugs which do not admit of chemical standardization—it has been felt that the time is not yet ripe and knowledge not sufficiently perfect to adopt animal tests in this edition. The international unification of the quality of preparations of potent drugs, notably those of henbane, belladonna, aconite, nux vomica, etc., has received the endorsement of various nations through a Hague conference, and has due recognition in the forthcoming book, so that a person having the same prescription made up in, say, London, Brussels and Paris, will obtain a preparation of uniform strength.

Penal Cases before the General Medical Council: Physicians' Certificates

The General Medical Council is a body consisting of physicians appointed to supervise medical education and to investigate and adjudicate on charges made against physicians in their professional capacity. It is, in fact, a professional court of law. The penal cases which come before it are often of a painful nature and result in the severest sentence it can pronounce—the removal of a physician's name from the register. This does not prevent the physician from practicing, for in this country it is not illegal for even an unqualified person to practice, though he does so with the liability to be tried for manslaughter in case of the death of a patient. Removal from the register deprives a physician of all his professional privileges. He cannot sign a death certificate, and should a patient attended by him die an inquest will therefore become necessary. Further, he cannot sue for the recovery of fees. In the giving of medical certificates, cases of laxity occur from time to time. The council has recently issued a warning to physicians on the subject. The following cases have just come before it:

A physician was convicted of making a false declaration on a death certificate at a police court. A young woman died in a nursing home and he gave a certificate in which the primary cause of death was stated to be appendicitis and the secondary peritonitis. He was aware that while in the home she had a miscarriage. He had been asked by the patient not to inform her sister of her condition. The accused physician said that the certificate had been filled in with the omission of the word "miscarriage" without any improper motive or intention to deceive. He did so to save the girl's honor, having promised not to divulge. The council took the gravest view of the case, but having regard to the punishment which the physician had previously received (the payment of a fine and damages to the amount of $100), decided to suspend judgment until November, when the physician would be required to produce evidence that his conduct had been without reproach in the interval.

The following case terminated more seriously for the accused: A physician at the request of an insurance agent filled in and signed death certificates for seven persons, none of whom he had attended and all of whom were present at his trial. The insurance agent was thus able fraudulently to obtain the sums for which they were insured. In defense the physician said that he had been induced to sign the certificates by the insurance agent in whom every one in the town had confidence. When he asked as to the legality of the procedure he was told that it was a matter of form with the insurance company and that another physician had been doing it for years. The council directed that the physician's name should be removed from the register.

BERLIN LETTER

Berlin, May 29, 1914.

Personal

A few days ago Prof. Max Wolff of Berlin celebrated his seventieth birthday. For some years he has been the head of the University clinic for pulmonary diseases, and in this capacity has repeatedly published the results of his experiences with new remedies which have been recommended for pulmonary tuberculosis.

Tuczek, professor of psychiatry at Marburg, and G. Schwalbe, the anthropologist of the University of Strassburg, retire at the end of the summer semester in consequence of their advanced age.

Dr. Schlossberger has been appointed as head of a department in the Institute for Hygiene and Experimental Therapy at Marburg in place of Römer, who has been transferred to Greifswald as professor of hygiene.

G. Klemperer has resigned his position as chief of the cancer institute of the Charité in Berlin. No notable results have been achieved by the institute during his term of office, although he has had the private advice of the chemist of our university, Prof. Emil Fischer.

TRENDELENBURG'S SEVENTIETH BIRTHDAY

Friedrich Trendelenburg, the former director of the surgical clinic of Leipsic, celebrated his seventieth birthday, May 24. A former pupil of Langenbeck, Trendelenburg stands in the front rank of those surgeons who were pioneers at the beginning of the antiseptic era of surgery, and to whom German surgery owes its acknowledged position. Among the numerous important articles of Trendelenburg we can notice only his studies in the field of joint and bone surgery, gastrostomy for stricture of the esophagus, tracheotomy, the practice of raising the pelvis for operations—first recommended by him—and his articles on operations on the bladder and on the treatment of varicose veins. Trendelenburg was an excellent teacher and so far the worthy successor of Thiersch. Moreover with reference to his personal qualities, Trendelenburg, who resigned his position some years ago, still enjoys the greatest respect and general affection.

Friedmann's Remedy

The unfavorable publications which have appeared in the *Deutsche medizinische Wochenschrift* have been followed in the last few weeks by other articles of the same tenor. The Berlin surgeon Karewski reported his results at a meeting of the Berlin Medical Society, stating that he had obtained no improvement worth mentioning, but had to report various undesired side-actions. The discussion, in which a number of specialists took part, followed in general the same lines. In the last number of the *Münchener medizinische Wochenschrift,* Schittenhelm, director of the university medical clinic at Königsberg, has an article in which he comes to the conclusion that the objectionable accompanying actions of the remedy compel him to abandon further trials of it. (Summaries have appeared in the Current Literature Department.)

New Institute for Tropical Diseases

A new institute for ship and tropical diseases was dedicated at Hamburg, May 28. The new building consists of three parts, an administration building, a hospital and an animal house.

The Death-Rate of Prussia for 1912

The great mortality of 1911 (17.2 per thousand) in Prussia, which was occasioned by the high infant death-rate of the hot summer, fortunately was reduced in 1912 by 60,511 persons, and is more favorable than that of the year 1910 by 1,679. If the mortality-rate is calculated without including the still-births, the figure for 1,000 persons living July 1, 1912, is 15.5, the lowest ever recorded. Going back to 1875, we find the highest death-rate, 26.3.

Marriages

Joseph Henry Shuffleton, M.D., Kings Park, N. Y., to Miss Elsie Nelson Henschel of Northport, L. I., N. Y., June 24.

John Henry Noonan, M.D., Belgrade, Mont., to Miss Edith Harper of Salt Lake City, at Bozeman, Mont., June 1.

Clarke Campbell Patton, M.D., Vermilion, S. Dak., to Miss Anna Marie Kellogg of Ashland, Ohio, May 28.

Raymond Fox Roller, M.D., Galesburg, Kan., to Miss Fern Mae Green of North Manchester, Ind., May 26.

Edward C. Spitze, M.D., East St. Louis, Ill., to Miss Esther Louise Niedermeyer of Decatur, Ill., June 17.

Arthur Narcisse Chatel, M.D., Laurium, Mich., to Miss Marie Elinor McDermott of Kewanee, Ill., June 2.

Orval James Cunningham, M.D., Kansas City, Mo., to Miss Grace Margaret Quinlan of Chicago, June 7.

Alfred Thomas Sheffield, M.D., Holland, Va., to Miss Stella Eloise Smith of Portsmouth, Va., June 25.

Roy Bertrand Harrison, M.D., New Orleans, to Miss Maccie Martha Haas of Alexandria, La., June 3.

Thomas Lynch Cooksey, M.D., Crawfordsville, Ind., to Miss Minnie Beattey of Hico, Tex., February 24.

Wenceslaus James Kavan, M.D., Bee, Neb., to Miss Olie Kolarik of Crete, Neb., at Wilbur, Neb., June 1.

Robert Kendig Rewalt, M.D., Middletown, Pa., to Miss Mary H. Cochran of Williamsport Pa., June 3.

John Augustine Daly, M.D., Andover, Mass., to Miss Mary Agnes O'Brien of Lowell, Mass., June 10.

George Leon Bastian, M.D., to Miss Katherine Smith Winegar, both of Manchester, N. H., June 11.

Francis James Conroy, M.D., Sterling, Ill., to Miss Blanche Murrin of Rock Island, Ill., June 2.

Stephen D. Large, M.D., Hopkins, Mo., to Miss Susan Lawrence of St. Joseph, Mo., June 10.

Adrian Benton Perkey, M.D., Los Angeles, Cal., to Miss Susie B. Ford of Chicago, June 4.

Harlan Lloyd Paine, M.D., Hathorne, Mass., to Miss Amy Yeo of Salem, Mass., June 10.

Louis Feid, Jr., M.D., Cincinnati, Ohio, to Miss Elizabeth Knight of Madeira, Ohio, June 10.

John Mathew Lilly, M.D., to Miss Mary Charlotte Seitsinger, both of Chicago, June 16.

Simeon Burt Wolbach, M.D., to Miss Anna Wellington, both of Boston, Mass., June 10.

Harold Colton Herrick, M.D., to Miss Daisy Johnson, both of St. Louis, June 9.

Cleaver Henry Brinkerhoff, M.D., to Miss Clara Wagner, both of Chicago, June 10.

J. Earl McIntyre, M.D., to Miss Sadie Barclay of Menominee, Mich., June 17.

John Fulton Roe, M.D., to Miss Lee Howard, both of Denver, Colo., June 10.

Howard R. Weirick, M.D., to Miss Marilla Beaty, both of Hibbing, Minn., June 5.

George Dohrmann, M.D., to Miss Kaethe Heinsohn, both of Chicago, June 12.

Deaths

George Frederick Reinhardt, M.D. University of California, San Francisco, 1900; aged 45; a Fellow of the American Medical Association; and formerly president of the State Board of Medical Examiners of California; professor of hygiene in the University of California since 1904; and founder of the self-supporting college infirmary system; died in the infirmary of the University of California, Berkeley, June 7, from an infection of the lungs, resulting from a carbuncle.

George Perley Bradley, M.D. College of Physicians and Surgeons in the City of New York, 1870; a Fellow of the American Medical Association and a member of the Association of Military Surgeons of the United States; who entered the United States Navy in 1870, and was retired for incapacity resulting from an incident of service in 1907 as medical director, with the rank of captain; died at his home in South Lancaster, Mass., June 14, aged 65.

Otto Gustaf Ramsey, M.D. University of Virginia, Charlottesville, 1890; of New Haven; a Fellow of the American Medical Association; and professor of obstetrics and gynecology in Yale University Medical School for fifteen years; who was given the honorary degree of M.A. by Yale University in 1901; died in a hospital in New Haven, June 12, from pneumonia, aged 44.

Sidney H. Gardiner, M.D. Queen's University, Kingston, Ont., 1889; a Fellow of the American Medical Association; and a surgeon of great initiative and skill, who devised the aluminum splint, which is at present in use in the U. S. Navy; died in his private surgical sanatorium in Brooklyn, June 10, eighteen days after an operation for appendicitis, aged 51.

Benjamin Franklin Oswald, M.D. Western Reserve University, Cleveland, Ohio, 1894; a member of the Ohio State Medical Association; of Lakewood, Ohio; stepped from a car in Cleveland, June 10, and was struck by an automobile, sustaining injuries from which he died at St. Alexis' Hospital an hour later, aged 50.

Joseph W. Shellfish, M.D. Michigan College of Medicine and Surgery, Detroit, 1895; a Fellow of the American Medical Association; lecturer on materia medica and anesthesia, and clinical assistant to the chair of practice in his Alma Mater; died at his home in Detroit, June 8, from valvular heart disease, aged 40.

Henry A. Dinges, M.D. Missouri Medical College, St. Louis, 1886; a Fellow of the American Medical Association; thrice mayor of Red Bud, Ill.; and local surgeon of the Mobile and Ohio Railroad; Supreme Physician of the Catholic Knights of America; died at his home in Ruma, Ill., May 30, aged 59.

William Jasper Wilhite, M.D. College of Physicians and Surgeons, Keokuk, Ia.; a surgeon in the Confederate service during the Civil War; and one of the board of insanity commissioners for Stanislaus County, Cal.; died at his home in Modesto, Cal., May 31, from senile debility, aged 77.

Frank Albert Shaver, M.D. University of Michigan, Ann Arbor, 1903; a Fellow of the American Medical Association; and for a year thereafter assistant physician in the Kalamazoo State Hospital; died at his home in Grindstone City, Mich., May 29, from nephritis, aged 40.

William Charles Bunce, M.D. Wooster University, Cleveland, Ohio, 1878; a Fellow of the American Medical Association; chief surgeon of the Cleveland, Southwestern and Columbus Railway; died at his home in Oberlin, June 9, from valvular heart disease, aged 56.

Charles Jenks Simons, M.D. Albany (N. Y.) Medical College, 1867; a member of the Illinois State Medical Society, and a veteran of the Civil War; a practitioner of Chicago since 1868; died at his home in Chicago, June 18, from arteriosclerosis, aged 71.

Jacob J. Fulkerson, M.D. Washington University, St. Louis, 1875; a member of the Missouri State Medical Association; a Confederate and Spanish-American War veteran; died at his home in Lexington, Mo., June 6, from cerebral hemorrhage, aged 65.

Samuel Casper Ermentrout, M.D. University of Pennsylvania, Philadelphia, 1866; a member of the Medical Society of the State of Pennsylvania, and the Pennsylvania Pharmaceutical Society; died at his home in Reading, Pa., April 20, aged 70.

D. W. Patton, M.D. Dearborn Medical College, Chicago, 1905; inspector of meats in the federal service; for several years a resident of North Dakota; while on his way to Omaha to resume his official position, was killed in an automobile accident at St. Joseph, Mo., June 3, aged 45.

Emil Gamson, M.D. Medico-Chirurgical College of Philadelphia, 1898; a Fellow of the American Medical Association; and for fifteen years a practitioner of Bayonne, N.J.; died in Brooklyn, N.Y., May 30, from lymphosarcoma of the neck and thorax, aged 42.

Alexander B. Duncan, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1868; formerly Representative of Lee County, Ga., in the State Legislature and a practitioner of Leesburg; later a resident of Atlanta; died in Leesburg, May 29, aged 76.

William Jefferson Walker, M.D. University of Pennsylvania, Philadelphia, 1887; a member of the Medical Society of the State of Pennsylvania; and for many years a resident of Homestead, Pa.; died in Springfield, Ohio, recently.

Elliott E. Furney, M.D. Missouri Medical College, St. Louis, 1875; a Fellow of the American Medical Association, and for many years a practitioner of St. Louis; died recently at his home in St. Petersburg, Fla., aged 66.

Stephen D. Hughes, M.D. College of Physicians and Surgeons, Memphis, Tenn., 1908; of Wilmar, Ark.; formerly a member of the Arkansas State Board of Health; died in a hospital in Little Rock, June 1, aged 43.

O. B. Webster, M.D. University of Buffalo, N. Y., about 1848; for fifty years a practitioner of Lansing, Mich.; died at the home of his grandson in Vassar, Mich., April 30, from senile debility, aged 87.

Israel Goodrich Sims, M.D. Miami Medical College, Cincinnati, 1874; a member of the Indiana State Medical Association; died at his home in Portland, Ind., April 20, from cerebral hemorrhage, aged 69.

Adrian B. Coulter, M.D. Hahnemann Medical College, Chicago, 1867; surgeon of U. S. Volunteers during the Civil War; for many years an optician of Chicago; died at his home, June 10, aged 74.

William H. Searles, M.D. Chicago Medical College, 1865; of Oshkosh, Wis.; a specialist on diseases of the eye, ear, nose and throat; died at his home in Oshkosh, June 4, from heart disease, aged 74.

Royal Lacey Higgins, M.D. Bellevue Hospital Medical College, 1867; of Norwalk, Conn.; a member of the Connecticut State Medical Society; died in Bridgeport, Conn., April 16, aged 72.

Claude A. Stonecipher, M.D. Baltimore Medical College, 1904; formerly demonstrator of anatomy in his Alma Mater; died in the House of Correction, Baltimore, May 30, from nephritis, aged 33.

Willard C. Dickens, M.D. College of Physicians and Surgeons, Keokuk, Ia., 1890; a member of the Wisconsin State Medical Society; died at his home in Wausau, Wis., May 31, aged 57.

Thaddeus Joseph Dean (license, Washington, 1905) Surgeon of U. S. Volunteers during the Civil War; a practitioner for fifty-five years; died at his home in Seattle, May 23, aged 77.

Ezra New, M.D. Medical College of Georgia, Augusta, 1887; a member of the Medical Association of Georgia; died at his home in Dublin, Ga., June 4, from angina pectoris, aged 54.

Thomas R. Bruce, M.D. University of Michigan, Ann Arbor, 1856; for more than thirty-two years a resident of Festus, Mo.; died at his home, May 28, aged 90.

Ezmon W. Earle, M.D. Pulte Medical College, Cincinnati, 1877; of Rochester, N. Y.; died in the Hahnemann Hospital in that city, June 4.

Simeon David Bateman, M.D. New Orleans, about 1855; died at his home in Newport, Ark., March 29, from senile debility, aged 87.

Jesse Blackburn Mickle, M.D. Eclectic Medical Institute, Cincinnati, 1891; died at his home in Erie, Pa., about June 2, aged 54.

Emil Knese, M.D. University of Wurzburg, Germany, 1873; died at his home in Cincinnati, June 2, from nephritis, aged 67.

Nathaniel Brown Rice, M.D. Albany, N.Y., Medical College, 1854; died at his home in Chicago, June 10, aged 84.

Miscellany

Prophylactic Use of Quinin in Malaria

Surgeon H. R. Carter, in a recent issue of *Public Health Reports*, thus summarizes the results of his study of this question:

The use of quinin in small doses is an efficient method for preventing malarial fever.

This method is especially adapted for use in a farming community where it is not practicable economically to get rid of malarial mosquitoes or to properly screen against them.

In malarious states quinin should be taken in doses of from 5 to 7 grains per day by grown persons, 2 to 3 grains by children—less if small—during the malarial season, say, June to November. Somewhat smaller doses will be efficient in places where the malaria is not bad. If begun in March or April, it would prevent a certain number of relapses.

In these doses it does no injury and does not produce blackwater fever or cause malaria to be more difficult to cure by quinin.

It can be taken in these doses by almost all persons without discomfort, or with discomfort for only the first seven or eight days. In cases in which it does produce discomfort a smaller dose should be tried and, if possible, increased later.

The insoluble salts of quinin are better borne—that is, cause less discomfort—than the soluble. The tannate is the most insoluble and is said to be the best borne. Made up with chocolate and sugar into tabloids it is best suited for administration to children. As the tannate contains a smaller proportion of quinin than the sulphate, from two to two-and-a-half times as much must be taken to get the same effect.

In addition to the use of quinin, whenever it is practicable to do so, the house should be screened, brush and high weeds near it cut away and pools and wet places drained or filled. If the last is not practicable, wet places and pools should be oiled.

In a community using quinin prophylaxis there will still be a certain number of cases of malarial fever. Some of these will be failures of the method, but others, and the majority if it be used properly, will be relapses of previous malarial infections from the last season. In the Italian army in 1911 there were 304 relapses and 186 new cases to 10,000 men. A certain number of relapses are prevented by quinin prophylaxis, but not all.

The Surgery of the Ancients

A set of thirty-seven remarkable ancient Greek surgical instruments, discovered near the site of Kolophon, in Ionia, after being a considerable time in the possession of the late Mr. Alfred O. Van Lannep, Dutch vice-consul at Smyrna, has been brought to England. The instruments show a type of workmanship unequaled in any other extant specimens, and generally reveal the great progress in surgery which the ancients achieved. The date is probably the first or second century, A. D. With two exceptions, all the instruments are of bronze. The blades of the knives were originally of steel, but this metal has been almost completely destroyed by oxidation. Among the five pairs of forceps in the find is a large and beautifully made instrument, the handles of which are shaped to represent two dolphins. This is probably a pair of polypus forceps used for removing growths. The bite of the teeth is strong and close. Another interesting pair of forceps is that used for extracting arrow- and lance-heads from wounds. This pair somewhat closely resembles modern bone-forceps, and has artistically modeled handles and blades which possess strong teeth for gripping. An elevator for raising depressed bone is another interesting exhibit. The collection would seem to prove that after battle, efforts must have been made to treat surgically even the most serious wounds of the skull. Another brain instrument is the "drill-bow" for operating a skull trephine. This instrument proved a great puzzle at first, and was supposed to represent some sort of measuring appliance. Research, however, has shown that it is a bow which, when fitted in a string, was used to rotate a bone-drill or skull trephine. The British Museum possesses the only other specimen of the drill-bow extant, and until the discovery at Kolophon was made the nature of that instrument was not known. The collection includes tenacula similar to those now in use, a number of catheters of beautiful workmanship, shaped like modern instruments of the same type, a scoop or curet for gynecologic and other work (Hippocrates speaks of such an instrument), a cautery for burning wounds, a couple of probes exactly like the modern ones, a couple of spatulas or spoons, a needle-holder, and a bronze box intended evidently as an instrument case. In addition, there is a slab of Egyptian porphyry for mixing ointment on, and a well-constructed pair of scales, still in excellent equipoise. Some cupping-vessels were also discovered. This interesting collection of instruments has been given to the Johns Hopkins University and will shortly be taken to America. Models, however, are being made and will be on view in London.

Correspondence

Minnesota Regulations on Embalming-Fluid

To the Editor:—I am surprised that Dr. Jacob Rosenbloom should not have more fully informed himself on embalming-fluids now used throughout the country before writing his communication which was published in The Journal, June 13, 1914, p. 1912, and am rather surprised that in the comment on this communication, more attention was not given to the condition in Minnesota, the regulations of which state, as I understand it, have been used as a basis for the regulations in several other states.

There have been regulations governing the use of certain chemicals in embalming-fluids in the state of Minnesota for some time. The present regulation (No. 33), amending some of these older ones, reads as follows:

> After Sept. 1, 1909, every embalming-fluid sold or used in Minnesota must contain formaldehyd gas in the proportion of 5 per cent. by weight of the gas in every 100 parts by volume of the fluid, and must not contain any ingredient that interferes with the germicidal action of formaldehyd.
>
> *Such embalming-fluids must not contain chloral, nor shall they contain arsenic, mercury, zinc or other mineral poison.*

Regulation 34 reads as follows:

> After Sept. 1, 1909, a list of ingredients in every embalming-fluid sold or used in Minnesota must be on file in the office of the Minnesota State Board of Health.

These regulations have the force of law.

H. M. Bracken, M.D., St. Paul.
Executive Officer, Minnesota State Board of Health.

A Simple Method of Vaccination

To the Editor:—In The Journal, June 6, 1914, p. 1829, Dr. Shalet suggests that vaccination can be performed by dipping a sterile toothpick in glycerinated virus and abrading the arm by a rotary scarification. I have tried this method, with a sharp, chisel-shaped, hardwood toothpick, and have found it entirely satisfactory.

My serious objection to the original technic of Pirquet is the vaccination through the drop of lymph (or tuberculin). The whole point of our method is to make a circular scarification with a dry instrument on a dry skin. Then the toothpick is used to rub the virus (or tuberculin) into the abraded area. As skins are very different in thickness I find it much easier to judge the amount of pressure necessary to produce scarification if the skin and chisel are both dry. If lymph is dropped directly from a capillary tube on the scarified spots the chisel can be used for rubbing in the virus, thus eliminating the toothpick entirely. We use the toothpick because our virus comes to us in bulk and we wish to use the minimum quantity for each vaccination.

J. N. Force, M.D., Berkeley, Cal.
Assistant Professor of Epidemiology, University of California, Department of Hygiene.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

LIQUID PETROLATUM, LIQUID PARAFFIN, PARAFFIN OIL AND LIQUID ALBOLENE

To the Editor:—Kindly explain to me the exact difference between liquid albolene, liquid paraffin, paraffin oil and liquid petrolatum.

B. F. Newlon, M.D., Ponca City, Okla.

Answer.—In a general way the four products mentioned in your inquiry are alike. All of them could be included under the title "liquid petrolatum" as this title is used in the United States Pharmacopeia.

Liquid paraffin is the name used in the British Pharmacopeia for a liquid petrolatum, the specific gravity, however, being limited to a range of from 0.885 to 0.890; while the United States Pharmacopeia states that liquid petrolatum may have a specific gravity varying from 0.87 to 0.94 at 25 C. (77 F.).

Paraffin oil is not recognized as a title in either the British or the United States Pharmacopeia. It is used, as we understand, in about the same sense as liquid petrolatum.

Liquid Albolene is a light variety of liquid petrolatum marketed as a proprietary medicine exploited in an objectionable manner and with more or less misleading claims. Both liquid paraffin and Liquid Albolene are varieties of liquid petrolatum which are said to come from Russia, and differ from American products by being entirely non-fluorescent—an immaterial difference. See full discussion of this subject in The Journal, May 30, 1914, p. 1740.

REFERENCES TO POISONING BY METALLIC COOKING-UTENSILS

To the Editor:—Please tell me where I may obtain information concerning poisoning from copper and tin cooking-utensils.

E. H. S., Mt. Morris, Ill.

Answer.—The following is a list of references to articles on this subject:

Behavior of Tin in the Body, editorial, The Journal, April 25, 1914, p. 1333.
Salant, Rieger and Trenthardt: Absorption and Fate of Tin in the Body, *Jour. Biol. Chem.*, March, 1914.
Wiley, H. W.: Tin in Canned Goods, *Lancet*, London, 1909, i, 1007.
Schryver, S. B.: Some Investigations on the Toxicology of Tin, with Special Reference to the Metallic Contamination of Canned Goods, *Jour. Hyg.*, 1909, ix, 253.
Garnier, L.: Etude sur les ustensiles de cuisine en bronze de nickel, *Ann. d'hyg.*, 1890, series 3, xxiv, 35.
Ponchet, G.: Présence de l'arsenic dans l'étamage des ustensiles destinés à l'usage alimentaire, *Ann. d'hyg.*, 1890, series 3, xxiv, 113.
Wiggs, L. B.: Ptomain Poisoning Complicated by Metallic Elements, *Old Dominion Jour. Med. and Surg.*, June, 1910.

CORPUS LUTEUM FROM PREGNANT COWS

To the Editor:—From what firms can one obtain corpus luteum extracted from the ovaries of pregnant cows?

J. Z. Mraz, M.D., Prague, Okla.

Answer.—We are unaware that any firms make a distinction in the character of ovaries from which they remove the corpora lutea. As, however, the investigations of McCord (The Journal, April 18, 1914, p. 1250) show that a very large majority of the cows from which corpora lutea could be readily removed were pregnant, the probability is that a high percentage of the corpus luteum offered for sale is derived from pregnant cows. The only firm offering corpus luteum from cows as far as we know is Armour. See New and Nonofficial Remedies, 1914, page 183.

HYPOPHOSPHITES IN TUBERCULOSIS

To the Editor:—Kindly advise me whether or not Winchester's Hypophosphites, which is prescribed by some doctors in the treatment of tuberculosis, is of any real value.

C. W. Miller, Denver.

Answer.—No. It is now agreed that the hypophosphites pass through the system unchanged; they certainly have no specific influence when used in the treatment of tuberculosis.

TREATMENT IN TYPHOID

To the Editor:—Please answer the following questions:

1. Is it good practice to keep an ice-bag on the abdomen of a typhoid patient from the beginning of the sickness until the very last? Is it good practice to put an ice-bag on the abdomen of a typhoid patient at any time of the sickness, when neither hemorrhage nor perforation is threatened?

2. Is it good practice to give a typhoid patient crackers, toast, and a certain amount of sweets? Would such a diet elevate the temperature of the patient and could it produce serious results?

Leon J. Menville, M.D., Houma, La.

Answer.—1. An ice-bag should not be employed unless some positive indications for its use exist, such as hemorrhage, orchitis or other inflammatory complication.

2. A diet containing crackers, toast and sweets is approved by many clinicians. There is no likelihood that it would do harm.

ARTICLES ON RECTAL ETHERIZATION

To the Editor:—Please give me the details of rectal ether anesthesia or refer me to recent works on the subject.

Howard M. Clute, M.D., Hanover, N. H.

Answer.—The following are references to recent studies on this subject:

Coburn, R. C.: Increase in Toxication of Ether by New Methods of Administration, The Journal, Jan. 31, 1914, p. 364.
Gwathmey, J. T.: Oil-Ether Anesthesia, *New York Med. Jour.*, Dec. 6, 1913, and Jan. 31, 1914; abstr., The Journal, Dec. 20, 1913, p. 2274.
Pate, J. C.: Oil-Ether Anesthesia, *Georgia Med. Assn. Jour.*, February, 1914.
Cunningham, J. H.: Rectal Etherization, *Berl. klin. Wchnschr.*, Oct. 20, 1913.
Federici, N.: Disadvantages of Ether Anesthesia by Way of the Rectum, *Gazz. d. osp.*, Aug. 1, 1912.
Gwathmey, J. T.: Technic of Oil-Ether Colonic Anesthesia, *New York Med. Jour.*, March 28, 1914.
Luke, H. C.: Ether-Oil Rectal Anesthesia, *Med. Rec.*, New York, May 9, 1914; abstr., The Journal, May 23, 1914, p. 1691.
Rectal Anesthesia, Therapeutics, The Journal, Dec. 16, 1911, p. 1997.
Arnd, K.: General Ether Anesthesia by the Rectum, *Arch. f. klin. Chir.*, xcv, No. 1.

ENLARGEMENT ON LIP IN SYPHILIS

To the Editor:—1. On the septum of the upper lip of a large proportion of syphilitic patients there is a small enlargement varying in size from a pin-head to a small pea. Is this a syphilitic glandular enlargement, or what is its significance?

2. Can you refer me to any literature on the subject? O. D. P.

Answer.—1. We know of no such symptom as a regular occurrence in syphilis. A small lymphatic node in this location may become enlarged and palpable, but cases have not been common.

2. We have been unable to find any literature on this specific subject.

INSTITUTION FOR BACKWARD CHILDREN

To the Editor:—I am very desirous of placing my boy in a good school for backward children in some part of the South, and ask if you can give me the address of such a school. The boy is now in a school of that kind near Philadelphia, but I prefer to have him nearer home, and in a milder climate. I do not know that first-class schools for that class of children really exist in the South, but if they do, I shall be glad for you to furnish me the address of two or three of the best.

X. Y. Z.

Answer.—We shall be glad to receive addresses of such institutions in the South to forward.

McClintic's Work on Rocky Mountain Spotted Fever.—In *Public Health Reports*, April 24, 1914, Surgeon L. B. Fricks reviews the work of Dr. T. B. McClintic on Rocky Mountain spotted fever in Montana. Dr. McClintic carried on his second series of investigations of Rocky Mountain spotted fever in the Bitter Root Valley during the summer of 1912. Just at the close of a successful season's work, he contracted the disease and died. Because of the importance of the work his notes have been carefully arranged, tabulated and amplified by explanations of the methods of procedure. There is a summary of the results obtained. The report covers the portion of the work relating to the collection of ticks, the determination of those infected by animal experimentation, and the examination of ground-squirrels, woodchucks and other small animals.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama: Montgomery, July 14. Chairman, Dr. W. H. Sanders, Montgomery.

Alaska: Juneau, July 7. Sec., Dr. Henry C. De Vighne, Juneau.

Arizona: Phoenix, July 7-8. Sec., Dr. John Wix Thomas, Phoenix.

Colorado: Denver, July 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Connecticut: New Haven, July 14-15. Sec., Dr. Chas. A. Tuttle, New Haven. Homeopathic: New Haven, July 14. Sec., Dr. Edwin C. M. Hall, New Haven. Eclectic: New Haven, July 14. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

Indiana: Indianapolis, July 14-16. Sec., Dr. W. T. Gott, State House, Indianapolis.

Maine: Augusta, July 7-8. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

Massachusetts: Boston, July 14-16. Sec., Dr. Walter P. Bowers, Room 159 State House, Boston.

Montana: Helena, June 30-July 2. Sec., Dr. Wm. C. Riddell, Helena.

New Hampshire: Concord, July 1-2. Regent, Mr. H. C. Morrison, Concord.

New Mexico: Santa Fe, July 13. Sec., Dr. W. E. Kaser, East Las Vegas.

North Dakota: Grand Forks, July 7. Sec., Dr. G. M. Williamson, Grand Forks.

Oklahoma: Oklahoma City, July 14. Sec., Dr. John W. Duke, Guthrie.

Oregon: Portland, July 7-9. Sec., Dr. L. H. Hamilton, Medical Bldg., Portland.

Rhode Island: Providence, July 2-3. Sec., Dr. Gardner T. Swarts, State House, Providence.

South Dakota: Deadwood, July 14. Sec., Dr. Park B. Jenkins, Waubay.

Utah: Salt Lake City, July 6-7. Sec., G. F. Harding, 405 Templeton Bldg., Salt Lake City.

Vermont: Burlington, July 14-17. Sec., Dr. W. Scott Nay, Underhill.

Washington: Seattle, July 7. Sec., Dr. C. N. Suttner, Baker Bldg., Walla Walla.

West Virginia: Elkins, July 1. Sec., Dr. S. L. Jepson, Wheeling.

Wisconsin: Milwaukee, June 29. Sec., Dr. John M. Beffel, 3200 Clybourn St., Milwaukee.

Wyoming: Laramie, July 9-11. Sec., Dr. H. E. McCollum, Laramie.

Oregon January Report

Dr. L. H. Hamilton, secretary of the Oregon State Board of Medical Examiners, reports the written examination held at Portland, Jan. 6-8, 1914. The number of subjects examined in was 15; total number of questions asked, 108; percentage required to pass, 75. The total number of candidates examined was 75, including 1 osteopath and 31 non-graduates, of whom 42 passed, including 1 osteopath and 13 non-graduates, and 33 failed, including 18 non-graduates. The following colleges were represented:

PASSED

College	Year Grad.	Total No. Examined
University of Alabama	(1912)	1
Chicago College of Medicine and Surgery	(1913)	2
Northwestern University Med. School	(1894) (1905) (1911) (1912	4
Rush Medical College	(1910)	1
State Univ. of Iowa Coll. of Homeo. Med.	(1891)	1
Kentucky School of Medicine	(1908)	1
Grand Rapids Medical College	(1900)	1
, Dept. of Medicine and Surg.	(1884)	1
	(1897)	1
of Phys. and Surg., N. Y.	(1910)	1
	(1912)	1
	(1913)	2
	(1912,2) (1913)	3
ege	(1911) (1913)	2
ege of Pennsylvania	(1891) (1912)	2
	(1913)	1
	(1897)	1
University of Helsingfors, Finland	(1911) (1913)	2
Non-graduates		13

FAILED

College	Year Grad.	Total No. Examined
College of Phys. and Surgs., San Francisco	(1910)	1
American College of Medicine & Surgery	(1904)	1
Chicago College of Med. and Surg.	(1908)	1
Iowa College of Physicians and Surgeons	(1896)	1
Keokuk Med. Coll., Coll. of Phys. and Surgs.	(1902)	1
Tulane University	(1908)	1
St. Louis University	(1908)	1
University Medical College, Kansas City	(1913)	1
University of Oregon	(1910) (1913)	2
Willamette University	(1905) (1912,2) (1913)	4
Woman's Med. Coll. of Pennsylvania	(1901)	1
Non-graduates		18

The following questions were asked:

PHYSIOLOGY

1. Mention three forms of contractile tissue found in the body. 2. Define central nervous system, sense organ, reflex action and inhibition. 3. Trace the afferent and efferent nerve impulses in colic of the colon. 4. Mention five functions of the blood. What is the source of the red blood-corpuscles? 5. Mention two structures of the body in which glycogen is stored. Into what is it changed for solution in the blood? 6. Mention the different gases found in arterial blood. Give the percentages of each. 7. State the percentage of water in the human body. In blood. In muscle. In bone. 8. Describe the digestion and absorption of fats.

NERVOUS DISEASES

1. Describe the symptoms, general and local, of a tumor occupying the lower half of the convolution in front of the fissure of Rolando on the left side. 2. Describe and locate the principal lesion in locomotor ataxia. Differentiate locomotor ataxia symptomatically from primary lateral sclerosis. 3. Name four cases of multiple neuritis. Describe the development and symptoms of postdiphtheritic multiple neuritis. 4. Give the etiology and symptomatology of chorea.

MATERIA-MEDICA AND THERAPEUTICS

1. What is apomorphin? Give its dose and physiologic action. 2. Name the most important preparations of bismuth. Give therapeutic uses. What dangers are connected with its use? How avoided? 3. Give indications for the use of arsenic compounds. Name the most important preparations with doses. 4. Give the strength of solution of nitrate of silver for use in eye, bladder and throat. What effect is produced by long continued use in the eye? 5. Compare action of atropia with adrenalin. 6. Name one drug each to be used against tapeworm, roundworm and hookworm. Give preparation, dose and danger of each. 7. Discuss indications for the local use of carbolic acid. What precautions are to be observed? 8. What is the active substance in thyroid gland? Give physiologic action, indications and contra-indications.

GYNECOLOGY

1. Give technic of bimanual examination. What do you find in the fornices of the vagina? 2. With what conditions may vaginal hernia be confused? 3. Give causes and pathologic changes in senile endometritis. 4. Define subinvolution of the uterus and give symptoms. 5. Name four varieties of ovarian cyst and describe the glandular variety. 6. What are the causes of ectopic gestation? Give symptoms before, during and after rupture. 7. Give general effects of double salpingo-oophorectomy. 8. Describe a tuberculous infection of any one of the female organs.

DIAGNOSIS

1. Differentiate bronchiectasis from pulmonary tuberculosis. 2. Differentiate spasmodic asthma from renal, cardiac and aneurysmal asthma. 3. Diagnose a case of centralized pneumonia in a child of 3. 4. What are the normal findings (microscopic and macroscopic) in feces? (b) What pathologic conditions are diagnosed by microscopic findings in feces? 5. What are the physical signs of incompetency of the pulmonary valve? 6. Give physical signs of aortic obstruction; aortic regurgitation. 7. Differentiate pancreatic cancer from carcinoma of the stomach. 8. Name diseases that may produce hemoglobinuria. Give chemical test for hemoglobinuria.

LEGAL MEDICINE

1. Describe the death-scene in a case in which death is caused from concealed hemorrhage. 2. What are the histologic changes, and in what organs are they most marked, when death is caused from chronic arsenical poisoning? 3. A person claims that his arm is paralyzed as a result following a railroad accident, without external marks. Tell how you would demonstrate before a court the truth or falsity of the claim. 4. As an expert witness, you are required to inform a court whether a will that is in litigation was made by an insane or by a sane person. What facts would you require to enable you to make a decision, and tell what is meant by the term "disposing mind"?

SURGERY

1. In Colles' fracture (a) state usual displacement; (b) name the muscles causing same; (c) give the method of reduction; (d) the permanent dressing you would apply; (e) give the position in which you would place the part in relation to fixed points of the body. 2. In fracture of the neck of the femur: (a) state the usual deformity and the anatomic reason for the same; (b) give an external test-line used in diagnosing lesions in that part; (c) outline two methods of permanent dressings that you would apply in cases of fracture at this point, with the reason for the use of each. 3. Give the normal relations of the bony landmarks of the elbow-joint. State the alterations that occur in (a) anterior luxation; (b) posterior luxation; (c) fracture of the olecranon. 4. Name three forms of intestinal obstruction. Outline the surgical operation that may be required for the relief of each. 5. Give the morbid anatomy of a rectal abscess. Describe the symptoms. Outline the treatment. What sequela may be expected, and why? 6. What is the morbid anatomy, what are the symptoms and what is the surgical treatment of gastric ulcer? 7. Define erysipelas. What are its symptoms and what is a usual treatment? 8. Describe the furniture that is necessary in a well-equipped surgical operating-room.

CHEMISTRY

1. A physician has a patient whose temperature by a Fahrenheit thermometer is 104 degrees, for whom he prescribes as follows: quinin sulphate, 15 grains; sulphuric acid aromatic, 16 minims, and aqua pura, 2 ounces. What is the temperature of the patient by a Centigrade thermometer, and write the prescription by metric terms? 2. If a certain x-ray machine requires 50 milliamperes of current, and the resistance in the machine is equal to 500 ohms, what voltage will be required to run the machine? 3. Define clearly the difference between the terms element and atom; a salt and a compound; an acid and an alkali; organic and inorganic; solution and mixture. 4. What is iodin; what is its atomic weight; what is its specific gravity; what is its symbol, and what is a test for its presence? 5. What is blue vitriol; white vitriol; green vitriol? 6. What is indican? What abnormal condition does its presence indicate? Give the test for indican. 7. How would you test the specific gravity of blood, when only one drop of it is available? 8. What are the solutions, and how would you use them, when testing the urine for suspected sugar?

OBSTETRICS

1. Give signs of fetal death during latter months of pregnancy, and treatment when it occurs. 2. What are the symptoms, and treatment of threatened eclampsia? 3. What are the causes of hemorrhage (a) before labor, (b) during labor, (c) after labor? 4. Give diagnosis, prognosis and treatment of face presentations. 5. When is podalic version indicated? How would you perform the operation? Mention the dangers in its performance. 6. What are the causes of prolonged labor? State the dangers, (a) to the mother, (b) to the child. 7. What are the symptoms of puerperal sepsis? Give your treatment of a case. 8. What are the causes of false labor pains? Diagnose true from false labor pains.

PRACTICE OF MEDICINE

1. Differentiate neuritis from inflammatory rheumatism. Give treatment of neuritis. 2. In what valvular diseases of the heart is dyspnea most marked? Explain the cause of the dyspnea, and treatment you would institute. 3. Give the symptoms, medical and dietetic treatment, and signs of threatening coma in diabetes mellitus. 4. Differentiate chlorosis, pernicious anemia and secondary anemia, and give treatment of chlorosis. 5. What is the significance of dropsy? State how you would recognize by what disease ascites is produced. 6. Called in great haste to a department store during the rush of a Xmas shopping, and find a girl 17 years of age, who was suddenly seized with a severe pain in the right iliac region, upon my arrival I find her with a pulse of 160 per minute, skin and extremities cold, vomiting, with attack of syncope, soon becoming unconscious. Her sister, who is with her, tells me that she has recently complained of pain in the lower abdomen, and more particularly on the right side, and for the last few days with a troublesome diarrhea. Give a probable diagnosis, and tell how you would handle the case. 7. Differentiate acute gastritis, pancreatitis and biliary colic, and give treatment of acute gastritis. 8. Give etiology, symptoms and treatment of acute cystitis.

HISTOLOGY

1. Describe the different elements of which the blood is composed. 2. Describe the structure of an artery. 3. Give the histologic appearance of a cross-section of a long bone. 4. Describe structure of heart-muscle.

EYE, EAR, NOSE AND THROAT

1. Give causes and sequelae of suppurative otitis media. 2. How would you treat a case of acute otitis media before perforation? After perforation? 3. How would you differentiate acute iritis from acute conjunctivitis? 4. Outline the treatment of acute follicular tonsillitis.

DISEASES OF CHILDREN

1. Discuss ophthalmia neonatorum with reference to etiology, pathology, prognosis, treatment and prophylaxis. 2. What would your course be, if called to see a child, aged 6, one of a family of four children, if it presented a suspicious looking membrane in the throat? 3. At what age should a baby be weaned from the breast? Give definite directions for weaning it at that age. 4. Give complete differential diagnosis between measles and scarlet fever. 5. Give symptoms and treatment of bronchopneumonia in a baby of 8 months. 6. Differentiate spasmodic croup from laryngeal diphtheria. 7. Outline treatment of spasmodic croup. 8. What would you advise a nursing mother, with reference to the care of her sore nipples?

PATHOLOGY

1. Describe pathologic characteristics of gastric ulcer. 2. What is the pathology of aneurysm? 3. Describe changes occurring in cartilage in arthritis deformans. 4. What is metastasis? What are the most frequent channels of metastasis?

ANATOMY

1. Describe the heart. Be brief yet comprehensive. 2. What arteries, muscles and nerves would be severed in a cross-section at the middle of the humerus? 3. Describe the thyroid gland. Give nerve-supply, arteries and veins. 4. Name cranial nerves and foramina of exit from the skull. 5. Origin, course and distribution of great sciatic nerve. 6. Name the orbital muscles. 7. Differentiate synarthrosis, amphiarthrosis and diarthrosis. Example of each. 8. Describe the thoracic duct and state the parts of body it drains.

North Dakota January Report

Dr. George M. Williamson, secretary of the North Dakota State Board of Medical Examiners, reports the practical, oral and written examination held at Grand Forks, Jan. 6-9, 1914. The number of subjects examined in was 13; total number of questions asked, 110; percentage required to pass, 75. The total number of candidates examined was 10, of whom 9 passed and 1 failed. Seven candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1913)	79
Keokuk Medical College	(1903)	78
State University of Iowa, Coll. of Homeo. Med.	(1903)	75
University of Minnesota	(1913)	77
New York Homeopathic Medical College and Hospital	(1912)	79.5
Marquette University	(1910) 76; (1912)	77.5
Laval University	(1911)	75
University of Christiania, Norway	(1912)	80

FAILED

College	Year Grad.	Per Cent.
University of Louisville	(1910)	56

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery	(1909)	Illinois
Northwestern University	(1910)	Minnesota
Rush Medical College	(1910)	Illinois
Hamline University	(1909)	Minnesota
University of Minnesota	(1910)	Minnesota
Jefferson Medical College	(1912)	Missouri
Marquette University	(1911)	Wisconsin

Relatives.—Science and literature are not two things, but two sides of one thing.—Huxley.

Book Notices

TUBERCULIN IN DIAGNOSIS AND TREATMENT. A Text-Book of the Specific Diagnosis and Therapy of Tuberculosis, for Practitioners and Students. By Dr. Bandelier, Medical Director of Sanatorium "Schwarzwaldheim" at Schömberg, and Dr. Roepke, Medical Director of the Railway Sanatorium "Stadtwald" at Melsungen. Second English Edition, Translated from the Seventh German Edition by Wilfred B. Christopherson. Cloth. Price, $4.50 net. Pp. 307, with illustrations. New York: William Wood & Co., 1913.

The fact that this book has passed through many editions in the original language speaks for its popularity and for the importance of the subject which it treats. The questions which center around the use of tuberculin are by no means settled, although tuberculin has been before the medical profession for two decades. Whatever may have been presented previously, the views of such men as Bandelier and Roepke cannot fail to be of interest regarding a subject on which they have earned the right to speak with authority. The book deals first with the theoretical considerations affecting the action of tuberculin. The multiplicity of views as to the action of tuberculin and the uncertainty of many of the results of observation and experiment by which such views must be tested render a clear account of these matters extremely difficult. The authors have in general accepted the views of Wassermann and regard the occurrence of hypersusceptibility as a stage or phase in the action of tuberculin which, with the progress of immunity, results in insusceptibility or toxi-immunity. They do not believe, however that it is desirable to prolong the initial stage of hypersusceptibility. The value of hyperemia and of phagocytosis as curative agents is admitted, although the value of opsonins as practical indicators of immunity is regarded as inferior to clinical signs. The authors emphasize "the inferior value of exclusively small doses of tuberculin as expressly demanded by Wright's opsonic theory and by several authors."

The second section deals with the diagnostic use of tuberculin. The method of von Pirquet and the old subcutaneous method receive the approval of the authors, although their limitations are clearly stated. The conclusion which the reader must draw is that none of the tuberculin tests distinguish between latent and active tuberculosis, so that their value is insignificant except in a very limited number of cases. In considering special forms of the disease, however, the value of the tuberculin test in conjunction with the clinical course is accorded a higher position. The local methods of reaction, such as the cutaneous, percutaneous, etc., are to be employed alone in all cases in which the subcutaneous method is contra-indicated. The uncertainty and unreliability of these tests in adults are again distinctly emphasized. The authors' estimate of the subcutaneous test is expressed in the following: "The subcutaneous tuberculin reaction by itself and apart from all clinical methods of examination indicates, as a rule, only that tuberculosis is present, but in conjunction with clinical history, inspection, percussion, and auscultation (focal reaction), it is still to-day the supreme aid to the diagnosis of the active initial stage of pulmonary tuberculosis in adults."

In other forms of tuberculosis in adults the superiority of the subcutaneous test is maintained with few exceptions, especially when focal reactions can be elicited. In surgical conditions the readiness with which the cutaneous test develops gives it a certain advantage. In the tuberculosis of children its great value is acknowledged.

Under treatment the important questions of the method of administration and the dosage are considered. The authors advocate the use of old tuberculin for diagnostic purposes and to secure severe focal reactions, and the bacillen emulsion for general therapeutic purposes. They begin with small doses but advance cautiously, avoiding reactions, but aiming to achieve a toxi-immunity as soon as possible. Other plans of treatment are described and criticized.

The different forms of tuberculin and other specific remedies for tuberculosis are enumerated and an impartial estimate of their value given. In some cases the evidence is regarded as insufficient to permit a judgment to be rendered. In others the opinion is decidedly adverse. Spengler's I K is unqualifiedly condemned as valueless. Marmorek's serum is regarded as still on trial. "In many cases of fresh and purely local tuberculosis it is of value; outside this, its activity seems to be limited, especially owing to the mixed infection so often present in tuberculosis."

The remaining portion of the book is occupied with the specific treatment of tuberculosis in its various forms. The authors are convinced of the value of the treatment; they regard it as applicable to every uncomplicated case of pulmonary tuberculosis, aside from severe incurable forms. In their opinion it can be used in many cases to relieve symptoms when ultimate recovery is not to be expected. Even the pure toxic fever, due to absorption of toxic products from the tubercle bacilli, they say, is by no means unsuited to tuberculin treatment. The contra-indications to the use of tuberculin are thoroughly discussed.

In their conclusions the authors discuss the objections that have been raised to this form of diagnosis and therapy. Especially they oppose the argument that tuberculin has never been proved of value by adequate animal experimentation. They point out that the animals used in such experiments are so susceptible to tuberculosis that a comparison with the phthisis of man is not justified. They believe that tuberculin must become the common property of all practitioners. In order that this may be brought about, a conservative but not too pessimistic work is needed, a need that is well supplied in the volume under consideration.

The American Year-Book. A Record of Events and Progress, 1913. Edited by Francis G. Wickware, B.A., B.Sc., under the Direction of a Supervisory Board Representing National Learned Societies. Cloth. Price, $3.50. Pp. 892. New York: D. Appleton & Co., 1914.

This year-book summarizes the annual progress in history, law, government and administration, economic and social conditions, industries, medical science and the humanities. It contains the statistical matter that is found in all year-books, and in addition there are many excellent articles written by men who are experts in their special fields: The division devoted to medical science includes Anatomy, by C. Carl Huber; Physiology and Pharmacology, by S. J. Meltzer; Pathology and Bacteriology, by Martha Wollstein; Medicine, by Alexander Lambert and Harlow Brooks; Surgery, by Joseph C. Bloodgood, and Public Health and Hygiene, by Selskar M. Gunn. These give a brief review of the progress and the happenings of the various subdivisions during the past year. The book as a whole will be found to contain a vast amount of information in practically every branch of social, professional, manufacturing and commercial life. This information is made readily accessible through the arrangement of the subjects, and especially by an excellent index.

Modern Surgery, General and Operative. By John Chalmers Da Costa, M.D., LL.D., and Samuel S. Gross, Professor of Surgery, Jefferson Medical College, Philadelphia. Seventh Edition. Cloth. Price, $6 net. Pp. 1515, with 1,085 illustrations. Philadelphia: W. B. Saunders Co., 1914.

As this edition is revised, entirely reset and reprinted, it may be regarded, to a large extent, as a new book. The authors suggest, by a poetical quotation, the necessity in such a book of adopting opinions derived from various sources, and in order to present those opinions in their best form, he has frequently quoted exactly from the original sources and has but given his authority for every statement. Much of the value of the book depends on the dogmatic and explicit manner in which most of the instructions are given. The descriptions of surgical procedures even of the minor sort, such as the opening of an abscess, are explicit and detailed. These descriptions omit no opportunity to warn the incautious practitioner of dangers which ought to be avoided. The references to the literature are frequently quite recent. The book is abundantly illustrated, and in every way deserves the confidence of the medical profession.

Medicolegal

Trial by Medical Society of Member Acquitted by Court

(Miller vs. Hennepin County Medical Society et al. (Minn.), 144 N. W. R. 1091)

The Supreme Court of Minnesota holds that the Hennepin County Medical Society, a voluntary association of physicians and surgeons, the by-laws of which provide for the trial of a member for a criminal offense or for misconduct, and provide a penalty by discipline or expulsion, may try a member for acts which were necessarily involved in a criminal charge, which were tried in the district court and of which the member was acquitted. The court says that the plaintiff was acquitted in the district court of the crime of manslaughter in the first degree. The indictment was based on an alleged criminal operation. Charges were preferred by the defendant society against him concerning the matters involved in the criminal charges. The court, on the application of the plaintiff, granted an injunction restraining the society from trying him for the crime of which he had been acquitted, but refused to restrain it from proceeding under its constitution and by-laws to an inquiry and investigation into his conduct relative to the alleged criminal operation. Without determining the precise scope of the injunction, it is clear that it permitted the society to consider acts involved in the criminal charge in disciplining or expelling the plaintiff. His claim was that the facts charged in the indictment could not be made the basis for disciplining or expelling him. But the court knows of no case which holds that a member of a voluntary association, the by-laws of which provide for the discipline or expulsion of a member for crime or misconduct inimical to its being, may interpose as a bar a former acquittal of a criminal charge involving the same acts. Sound reasoning does not support such a claim. The authorities are to the effect that a license to practice medicine may be revoked by the duly constituted authority, and that an attorney may be disbarred by a special judicial proceeding, though the acts relied on for the revocation or disbarment are the same acts on which a criminal charge, resulting in an acquittal, was based. There is less justification for holding that an acquittal is a bar in the trial of a member of an unincorporated association in accordance with its by-laws to which he has assented, when the result of sustaining the charge is no more than a severance of the relations between the association and himself. There is no reason why the plaintiff should not submit to a trial in accordance with the by-laws of the society. The order of the district court is affirmed.

Validity of Quarantine Established by Telephone

(Plymouth Township vs. Klug (N. D.), 145 N. W. R. 130)

The Supreme Court of North Dakota says that some of the defendant's children and a hired man became sick. The physician called pronounced the disease scarlet fever and immediately notified the clerk of the township board thereof. The clerk, on receiving the notice, telephoned to the chairman of the township board, who in turn called up the other members of the board individually on the telephone and discussed the situation. After such discussion, the chairman called up the clerk and directed him to post a quarantine notice on the defendant's farm, which was immediately done. The court considers that the quarantine was regular. While it is true that, under the North Dakota statute, the meetings of the township board must be on three days' notice, yet the court does not believe the statute contemplated the delay of a regular meeting when such an emergency as a contagious disease is presented. To require the board to act in that deliberate manner would defeat the very object of a quarantine law. Besides, the law says that the board shall "immediately" examine, etc. It was the duty of the clerk to establish the quarantine in this case without waiting for the formality of a three days' notice meeting.

Society Proceedings

COMING MEETINGS

Montana State Medical Association, Lewistown, July 8-9.
New Jersey Medical Society, Spring Lake, June 29.

AMERICAN GYNECOLOGICAL SOCIETY

Thirty-Ninth Annual Meeting, held at Boston, May 19-21, 1914

(Concluded from page 1988)

Nerve-Blocking

DR. M. L. HARRIS, Chicago: The amount of novocain that can be injected without producing toxic symptoms varies and depends largely on the rapidity of absorption. If a plain watery solution is used and injected in a region where absorption is rapid, from 0.3 to 0.4 gm. may produce toxic symptoms; but if the solution be one which absorbs slowly, from 0.5 to 1 gm. may be used without danger. The more rapid the absorption the less marked the anesthesia. The addition of epinephrin to the solution materially increases the degree and duration of the anesthesia. I have found that by the addition of calcium chlorid in varying strengths, the anesthesia may be prolonged for two or three hours without difficulty, and that a weaker solution may be used than without the calcium chlorid. The formula which has given me the best results is, novocain, from 0.25 to 1 per cent.; calcium chlorid, from 0.25 to 0.5 per cent.; chlorbutanol, 0.8 per cent. in distilled water, to which are added 4 or 5 drops of 1 : 1,000 epinephrin solution to 30 c.c. of the mixture. It is very essential that the mixture be properly prepared, and the method which I use is as follows: The distilled water is sterilized by boiling. The novocain is then added and the boiling continued not to exceed two or three minutes, as prolonged boiling spoils novocain. When this has cooled down to below 150 F., 1 grain of chlorbutanol is added to every 100 c.c. of the novocain solution. Water dissolves only about 0.8 per cent. of chlorbutanol, but 1 per cent. is added merely as an easy way of insuring a saturated solution. The undissolved part simply settles at the bottom. A 2 to 4 per cent. solution of calcium chlorid in distilled water is sterilized, and then the chlorbutanol is added the same as to the novocain solution. The solutions are kept separately and mixed just before using. In this way the percentage of the ingredients may be varied to suit the particular case. The epinephrin should never be added until just before using, as it is very unstable and soon spoils if left standing in the solution, which is indicated by the solution gradually turning a reddish color. The chlorbutanol is added because it has distinct anesthetizing properties of its own, and being soluble in lipoids increases the anesthetizing effect of the novocain. The method is devoid of dangerous and unpleasant complications which so frequently follow the use of general anesthetics. I have done 234 operations on 217 patients under nerve-blocking with six failures and seven deaths.

Spinal Anesthesia in Gynecology

DR. GEORGE GELLHORN, St. Louis: The mortality-rate from spinal anesthesia cannot be determined by statistics. The anesthetic itself seems to have nothing to do with the mortality. The safety of spinal anesthesia depends on its accurate technic. I have done 127 abdominal and 42 vaginal operations without a death. The postoperative care of "spinal cases" is strikingly easy. The usual postoperative symptoms appear in greatly mitigated form, or are altogether absent. Spinal anesthesia enables us to operate with safety on patients in whom ether would be contra-indicated. Minor operations should be reserved for ether narcosis. Spinal anesthesia is contra-indicated in kyphoscoliosis and other marked anomalies of the spinal column, diseases of the central nervous system, profound shock, or marked hypotension from other causes, sepsis, and fevers of unknown origin, and in neuropathic persons. Suppurations and eruptions near the desired site of injection forbid the use of spinal anesthesia until aseptic conditions can be established.

DISCUSSION

DR. FREEMAN ALLEN, Boston: I am not an ardent advocate of spinal anesthesia. A great deal of the condemnation that ether has been receiving lately is due to the fact that surgeons are much too apt to put up with administrations of ether by persons who are comparatively unskilful. If I lived in a community where the services of a skilled anesthetist were not obtainable, I should use spinal anesthesia very largely, if not exclusively.

DR. JOHN O. POLAK, Brooklyn: During the last two years we have used spinal anesthesia in a number of cardiac cases, cases of tuberculosis, diabetes, and in those in which we have had to do obstetric or gynecologic operations. In those extremely severe cardiac cases that complicate pregnancy the use of spinal anesthesia has brought us to a new era of obstetric surgery.

DR. SETH C. GORDON, Portland, Me.: I have given ether and chloroform for over fifty years, and have seen but one death from chloroform and one from ether. The main trouble has been in the administration of these two anesthetics.

DR. M. L. HARRIS, Chicago: Under nerve-blocking there have been no deaths, so it is perfectly safe from that point of view. I have had occasion to operate on a number of patients who had undergone previous operations under general anesthesia, and without a single exception the patients have expressed themselves as infinitely preferring nerve-blocking and would never think of taking a general anesthetic again. Until we find some way of limiting spinal anesthesia to a distinct level or to a certain part of the cord, I think peripheral anesthesia or nerve-blocking must have certain advantages over intraspinal anesthesia.

DR. GEORGE GELLHORN, St. Louis: I have never done anything but gynecologic operations under spinal anesthesia, but I am certain that in operations on the extremities, nerve-blocking will be the method of anesthesia of the future.

Ultimate Results from Surgical Intervention in Cholelithiasis

DR. JOHN G. CLARK, Philadelphia: In all cases in which there is nausea after twenty-four hours, I attach a saline reservoir to the drainage-tube and under 1 foot of hydraulic pressure permit the fluid to drop slowly into the gall-bladder. Great care is observed to avoid the slightest excess of pressure which might induce a rupture about the point of insertion of the tube into the gall-bladder. The drainage has usually been maintained for ten days. Within the last two years I have turned toward cholecystectomy in a greater proportion of cases. If the wall of the gall-bladder is thick and indurated, or if it is dilated and very thin, or if, on inspection of the interior of the organ, the mucosa is eroded or shows a strawberry mottling, I perform cholecystectomy. Occasionally I have closed the gall-bladder without drainage in uncomplicated cholelithiasis, but I prefer to use a simple drain for fear of the rupture of the gall-bladder and escape of bile into the peritoneal cavity. In gynecologic cases with coincident symptoms in the upper abdomen, the gall-bladder is far more frequently the seat of disease than any other organ. Of six fatalities in my series of 160 cases, four of the patients died from destructive results of advanced cholelithiasis. In only two could death be attributed to any defect in operative technic. In one there was a leakage with the formation of a subphrenic abscess; in the other, a peritonitis. These two deaths might have been avoidable. In none of the combined operations in which there were no symptoms attributable to gall-stones was there a fatality.

DISCUSSION

DR. REUBEN PETERSON, Ann Arbor, Mich.: I find that in about one thousand abdominal sections, gall-stones are present in about 12 or 14 per cent. I have adopted the operation of simply removing the gall-stones and draining. I have not removed the gall-bladder in any case. I have found quite a percentage of cases in which I did not think it was advisable to perform any operation on the gall-bladder. I have found an unusually large proportion of cases of cancer with gall-stones. In the pus cases I have refrained from operating on the gall-bladder.

Dr. Philander A. Harris, Paterson, N. J.: I have not removed gall-stones from patients when operating on them for gynecologic troubles in more than half a dozen times. I have removed the gall-bladder in at least 70 per cent. of the cases in which I have operated, something less than 200. Removal of the gall-bladder is good practice.

A Further Development of an Original Technic for Lacerations of the Pelvic Floor

Dr. Barton Cooke Hirst, Philadelphia: For a number of years in my clinic in the University Hospital of Philadelphia, I have had the recently delivered women placed on an operating-table in the dorsal gynecologic position and anesthetized. As a result of this study it is possible to state the following facts in regard to lacerations of the pelvic floor: The pelvic fascia over the levator ani muscle shows a split running parallel with the descending ramus of the pubis: the levator ani is torn loose from its attachment to the pubis and ischium, the injury beginning close to the bone and running downward and inward toward the midline of the posterior vaginal sulcus. The fascia between the levator and the deep transversus perinei shows a triangular split with the apex above. This deep transversus perinei is torn apart in the middle line and the two halves are retracted so that there is a gap of an inch or more between the ends. The junctions of the two halves of the superficial transversus perinei and of the bulbocavernosus muscles are torn apart if the perineal body is injured, as is commonly the case in laceration of the perineum. Expose the component anatomic parts, and unite them separately at the site of the injury to restore their original condition. The levator ani must be exposed by cutting through the pelvic fascia under which it lies. There the belly of this muscle is reattached to the portion arising from the pelvic bones; the deep transversus is brought out of its cavity in which it has retracted and is united in the middle line; the pelvic fascia between the levator and the deep transversus is united, and finally the perineal body is repaired.

Has the American Gynecological Society Done Its Part in the Advancement of Obstetrical Knowledge?

The presidential address by Dr. J. Whitridge Williams, Baltimore, was published in full in The Journal, June 6, 1914, p. 1767.

Iodin as a Sterilizing Agent in Supravaginal Hysterectomy

Dr. I. S. Stone, Washington, D. C.: The application of iodin and alcohol to the vagina and uterine mucosa have been productive of results which appear to approach the ideal. The patient is brought to the operating-table after the proper examination has been made. She is placed in the lithotomy position and a 25 per cent. (1.75 iodin) diluted alcohol tincture of iodin is applied over the genitals and introitus vaginae. The catheter is used immediately after this, and a perineal retractor introduced into the vagina and a volsellum used with which to grasp the cervix. The cervix is dilated to admit the conical nozzle of a 2-ounce glass syringe. An ounce of the same 25 per cent. alcohol solution is then slowly injected into the cavity of the uterus. The fluid is not allowed to remain long nor is great force used. After the injection the cervical canal should again be dilated gently to make sure of the discharge of the excess of the solution. Every part of the vagina is exposed. The operation is preceded by a second application of iodin to the skin over the abdomen, the first having been made before the anesthetic was given. After this the operation is proceeded with as usual and a final application of the iodin alcohol is made to the stump before closing the flaps if there is the slightest intimation that infectious matter has been handled, such as in an appendix, pus-tube, etc. Finally, the iodin solution is applied over the closed abdominal incision before the usual gauze dressings are applied.

Complete Sterilization of the Skin by Iodin

Dr. J. Wesley Bovée, Washington, D. C.: In ten instances, four scrapings were made from skin prepared by the alcoholic solution of iodin (31.2 per cent.) and then subjected to thorough scrubbing with a strong solution of sodium thiosulphate until the iodin color was gone. At the end of five days' incubation, forty specimens from the ten patients showed absolutely no growth.

The Abdominal Cutaneous Reflexes in Acute Conditions Within the Abdomen and Pelvis

Dr. Richard R. Smith, Grand Rapids, Mich.: The behavior of this reflex has been noted in 175 cases in which diseased processes existed within the abdomen. The greater part of them were acute. The reflex is obtained by stroking the skin of the abdomen, which normally produces an almost simultaneous contraction of the rectus and oblique muscles on the corresponding side. The reflex is very constant in healthy young persons, though uncertain in very young infants and in old persons or those with very relaxed or very obese abdominal walls — exceptions which must be definitely borne in mind. In the acute inflammatory diseases within the abdomen it is common to find this reflex involved to a greater or less extent, and the test may be made use of in the diagnosis and in estimating the extent of this lesion. In seventy-five cases of acute appendicitis the reflexes were more or less involved in sixty-five. It is sometimes involved when rigidity is absent. The reflex was commonly impaired over the seat of the lesion when circumscribed, and in more extensive processes the other reflexes were also impaired. It is commonly, though not uniformly, involved in ectopic pregnancy cases. Its normal presence in cases of bowel obstruction would help to eliminate any acute infectious condition, and in the subacute infections of the pelvis I found the lower reflex almost uniformly absent. I believe that, although the test has a certain limited view, it may be of distinct advantage to the surgeon, and it is well worth his careful study.

AMERICAN PEDIATRIC SOCIETY

Twenty-Sixth Annual Meeting, held in Stockbridge, Mass., May 26-28, 1914

(Continued from page 1990)

The Use of Dahlia

Dr. John Ruhräh, Baltimore: Two years ago, in searching for an efficient local application for streptococcus infections of the throat, Dr. Charles Simon suggested dahlia. I started with this as a local application, beginning at first with very weak solutions and soon found that the saturated solution (about a 4 per cent. solution) could be applied to the mucous membrane of the throat or any other part of the body without producing pain or subsequent irritation. The drug seems to penetrate only a short distance and for the deeper affections has no value, but for superficial involvements of the mucous membrane, whether due to the streptococcus or other organisms, the effect was quite striking. In some cases very little effect was noted, but in others there was a marked lessening of the intensity of the inflammation and coincidentally a marked lessening of the constitutional symptoms. It has the advantage over other applications in that it is not painful, does not produce irritation and is markedly antiseptic. Its only disadvantage is its color. For ulcerations about the mouth it may be used by applying a saturated solution or a mouth wash varying in strength from 1 to 1,000 or 1 to 10,000. Dahlia not only kills the offending organism but has a marked effect on the healing. I have used it with remarkable effect on vaccinations that were slow in healing, and on other abraded surfaces, particularly those which were infected. It may be used with reasonable hope of success in skin lesions caused by or accompanied with pus organisms.

Food Intoxications; Sibilant Bronchitis

Dr. B. K. Rachford, Cincinnati: The symptom-groups commonly described in the literature under the titles migraine, recurrent vomiting, recurrent sibilant bronchitis, recurrent coryza, asthma and urticaria, as they occur in children, are, as a rule, closely related food intoxications which can be treated successfully by very much the same dietetic and medicinal treatment. During the attacks sweets, fats, eggs and raw fruits are to be especially avoided. Strawberries, rhubarb, tomatoes, salads, shellfish, tea, coffee, pastry, gravies, cream, cod-liver oil and alcohol are excluded from the diet. If it be necessary to sweeten the cereals and cooked fruits which the child eats, saccharin is to be used instead of sugar. The patient is to have no butter, but skimmed milk is allowed. Eggs in every form, even in cooked foods, are to be eliminated from the diet, and among the raw fruits oranges are to be avoided especially. Beef, mutton, fowl, fish in moderation, cereals, bread and all vegetables not above prescribed, cooked fruits, skimmed milk and thick soups may be taken. About two months after the patient has recovered from the attack, the above diet may be modified by adding one egg a day, then perhaps two weeks later milk containing 4 per cent. fat. Some few weeks later small quantities of sugar may be added for sweetening cereals and cooked fruits. After five or six months the child may return to his original diet, with the exception that he must eat sparingly of sweets and must eat nothing between meals. If the symptom-group returns on the addition of any article of diet, that particular food is to be excluded from the diet.

During the attack the patient is to have all the outdoor air he can get with as little exercise as possible. Constipation should be relieved, milk of magnesia or calcined magnesia being suitable for this purpose. Sulphate of magnesium may be used in small doses in older children. Alkalies in the form of bicarbonate of soda, bicarbonate of potash or citrate of potash should be given in fair-sized doses three or four times a day. In younger children I direct the mother to distribute through the infant's food a teaspoonful of citrate of potash each day. Tincture of belladonna should be given for a short time in two to four minim doses, three times a day. In the intervals the belladonna is discontinued, but an alkali of some form should be given for six or eight weeks. Bicarbonate is best for this purpose.

DISCUSSION

Dr. Fritz B. Talbot, Boston: Dr. Schloss has given an answer as to the cause of this condition in his article on "Egg Anaphylaxis." In a case of anaphylaxis to egg which came under my observation, when immunity to eggs was effected the associated asthma disappeared. I feel sure that this condition is one of anaphylaxis. There may be anaphylaxis to other foods besides eggs. In one patient I started with doses of one sixty-fourth of a grain of egg in capsule, and even this small dose produced a reaction every time it was administered.

Dr. Godfrey R. Pisek, New York: It is not sufficient to stop egg alone, one must stop all foods containing egg. Certain foods such as acid foods bring out an intolerance for certain other foods.

Dr. Henry L. Coit, Newark, N. J.: Many cases with anaphylaxis for eggs have also an anaphylaxis for macaroni. In one case in which I found it necessary to transfer a baby from a milk diet to one in which the carbohydrates would be in the form of cereal, a teaspoonful of wheat jelly was given and caused a rise in temperature, vomiting and prostration. The experiment was repeated with the same result. At the end of two weeks it was tried again and there was a recurrence of the vomiting and prostration. I then vaccinated the child with a minute quantity of wheat jelly. The child now takes cereal jelly and vegetables.

Dr. Walter Lester Carr, New York: Many of these children are susceptible to infection, especially influenza. They belong to the so-called lithemic type, and one frequently finds them with deviated septum, enlarged tonsils, etc. The children having this instability do better if they are starved as in enteritis. They may be given either skimmed milk or lactic acid skimmed milk, and should have general dietetic management.

Dr. I. A. Abt, Chicago: This paper reminds me of "exudative diathesis," a condition in which there is a predisposing constitutional state associated with certain definite symptoms. Under this term Czerny includes exudative inflammatory conditions which may manifest themselves as eczema, scrofula, bronchitis, asthma, urticaria, etc. The symptoms may become more pronounced after eating eggs or milk, or after mild infection. One must not consider this condition a simple anaphylaxis. The class of children who do not tolerate eggs or milk may detoxicate after having taken too much of these foods on starches.

Dr. Charles Gilmore Kerley, New York: These conditions are different from infectious colds. They are nearly always associated with a lithemic, rheumatic or gouty history. In these children the carbohydrates are at fault and the children gain in weight by the elimination of carbohydrate in the form of sugar from the diet. Cream should be eliminated and not more than one pint of skimmed milk daily allowed. Sugar is not at all necessary, children can get the necessary carbohydrates out of ordinary starches and vegetables. In addition to the dietetic management give citrate of soda and keep the bowels open by a suitable laxative.

Dr. Samuel S. Adams, Washington, D. C.: It seems to me the question is one of idiosyncrasy and the problem consists in finding out the article of food for which the idiosyncrasy exists and eliminating it from the diet.

Dr. D. J. Milton Miller, Atlantic City, N. J.: There seems to be some factor other than the food which causes external irritation. I have seen children who could not live at the seashore because of something that caused this internal irritation. As soon as they would go to the mountains they would be all right.

Dr. John Ruhräh, Baltimore: It seems to me we have confused anaphylaxis and acid intoxication.

Dr. Percival Eaton, Pittsburgh: I have had under my observation children who could not take egg and wherever a drop of egg struck the hand or face it caused a red spot.

Infantile Scorbutus and the Pasteurization of Milk

Dr. John Lovett Morse, Boston: In a recent article I called attention to the rapid and progressive increase in the number of cases of scurvy and the coincident increase in the amount of pasteurized milk used. The figures I gave do not prove that the increase is due to pasteurized milk, neither do they prove that the heating of the milk, whether to a temperature of pasteurization or of boiling has anything to do with the etiology of scurvy. They do suggest, however, that there may be some connection and further study along these lines seems to be justified.

DISCUSSION

Dr. Henry J. Gerstenberger, Cleveland, O.: I have had one case of scurvy in a baby fed on casein milk and by simply adding orange juice the child improved rapidly.

Dr. D. J. Milton Miller, Atlantic City, N. J.: I, too, have been finding scurvy on the increase. I have seen twelve cases in private practice during the past two years. In five of these there was a history of bipasteurization of milk.

Dr. A. F. Blackader, Montreal: I have found scurvy on the increase especially during the past winter. I did not alter the food in my cases but simply added orange juice.

Dr. Isaac A. Abt, Chicago: I would like to speak of some animal experiments in this connection. Pigeons when fed on cereals develop polyneuritis, and guinea-pigs fed on cereals are peculiarly susceptible to scurvy. A simple susceptibility has been shown in other animals. Guinea-pigs fed on raw milk develop extra brittle bones. Some fed on milk heated at a temperature of from 60 to 112 C. got scurvy and those fed on oatmeal and raw milk did not show the disease. Milk heated to 90 C. to which oatmeal was added showed antiscorbutic properties. These facts bring up the question as to whether cereal can be considered a factor in the production of scurvy.

Dr. Rowland G. Freeman, New York: Almost all the milk sold in New York City is pasteurized and yet I have not seen a case of scurvy all winter.

Dr. Godfrey R. Pisek, New York: I wonder if it is possible that the laboratory method of pasteurization has anything to do with the production of scurvy.

Dr. Henry Heiman, New York: Scurvy is not due so much to pasteurized milk as to artificial foods. I have seen equally as much scurvy follow other forms of feeding as I have from pasteurized milk.

Dr. J. Crozer Griffith, Philadelphia: Some children get scurvy on raw milk and do well when put on modified milk. We are not in a position to blame pasteurized milk, sterilized milk or any other food. The constant factor seems to be the commercial pasteurized milk, not milk pasteurized at home.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

June 4, CLXX, No. 23, pp. 861-896

1 *Cancer of Uterus. (To be continued.) F. Cobb, Boston.
2 Use of Concentrated Neosalvarsan from Clinical and Serologic Standpoint. J. H. Blaisdell, Boston.
3 *Use of Iodoform Oil in Joints. E. G. Brackett, Boston.

1. **Cancer of Uterus.**—In the fourteen years from 1900 to 1913 inclusive, 367 cases of cancer of the uterus were admitted to the hospital, including cases of cancer of the cervix and cancer of the body of the uterus. Seventy of these were Cobb's personal cases. There were 17 vaginal hysterectomies, 13 for cancer of the cervix and 4 for cancer of the fundus. The immediate mortality was zero. Fourteen operations were done over five years ago, and of these 8 were traced. Two cases were cured, both of them cancer of the cervix, 25 per cent. of cures in the vaginal operation for cancer of the cervix. Since 1910 there were 3 cases, all of which are free from recurrence from one to three years, 2 cancer of the cervix and 1 cancer of the fundus.

There were 27 cases of abdominal hysterectomy for cancer of the fundus. The immediate mortality was 4, or 14.8 per cent. Of the surviving 23 cases Cobb has traced 22, of which 14 were operated on over five years before. Six of these cases are cured, or 42.8 per cent. In addition, one case is free from recurrence 4½ years and one 3¼ years. Abdominal hysterectomy for cancer of the cervix, 89; squamous cell 87 and adenocarcinoma 2. Of 49 simple hysterectomies there was the excessive immediate mortality of 17, or 34.6 per cent. Of the surviving 32 cases Cobb has been able to trace 29. Of these 26 were operated on over five years ago, cured only 5, or 19+ per cent. In addition, 2 cases are free from recurrence from three to four and a half years. Of 40 radical hysterectomies there was an immediate mortality of 9, or 22.5 per cent. Of the surviving 31 cases Cobb has traced all the 31; of these 14 were operated on over five years ago and 7, or 50 per cent., are cured.

3. **Use of Iodoform Oil in Joints.**—Olive oil has been used by Brackett in all of his cases. This method is said to be applicable to cases of old infectious arthritis, with adhesions and with partial obliteration of the capsular cavity, but with no true ankylosis, and without destruction of cartilage; cases of infectious arthritis, in the acute stage, particularly those of Neisserian origin, and more especially the type in which there is one remaining persistent joint, which usually results in ankylosis; cases of primary *synovial tuberculosis* before involvement of cartilage or bone; cases of osteo-arthritis, with marked thickening of capsule and with pannus, in the sensitive stage, but before there has been loss of cartilage. In other words, the method may be used in the affections of the synovial membrane, either when it is desired to keep the surfaces apart, or when it is desired to apply a remedial agent to the joint surfaces.

Several points in the procedure are emphasized: (*a*) The injection is always made by open incision, and not by puncture. (*b*) Sufficient fluid is always left in the joint to keep the capsule under tension, therefore some form of stitch is necessary by which the tension can be maintained at the time of the withdrawal of the syringe. (*c*) The adhesions, in old cases, are broken up before the joint is filled with oil and the capsule closed; other than this no violence is done to the cavity of the joint, and no handling is permitted, particularly of the tuberculous joints. (*d*) Fixation by plaster or splints is seldom used.

The procedure is in no way a substitute for arthroplasty; is not applicable to cases of disease of any origin, in which the Roentgen ray shows involvement of the articular surfaces; but is essentially for those cases, only, in which the abnormal condition is confined to the synovial membrane. In tuberculous cases, the early ones naturally show the most marked definite improvement, and in these cases repeated injections are advocated, preferably at intervals of eight to twelve weeks. This procedure should be considered as an incident in the treatment of the tuberculous synovitis, not a substitute for the fixation and rest. Neither is permanent fixation desirable. The absolute immobilization is, perhaps, quite as disastrous as the other extreme. A daily gentle passive motion, without forcing the arc of motion allowed, is decidedly a benefit, does not increase the activity of the disease, and does prevent the contraction of the capsule and formation of adhesions.

Medical Record, New York

June 6, LXXXV, No. 23, pp. 1013-1058

4 Certain Aspects of Midwife Problem in Relation to Medical Profession and Community. G. W. Kosmak, New York.
5 *Deficiency of Chlorid of Sodium in Etiology of Neurasthenia. A. Haig, London.
6 Can Tuberculosis be Cured? H. C. Clapp, Boston.
7 An Economic and Social Study of Feeble-Minded Women. M. G. Schlapp and L. S. Hollingworth, New York.
8 Two Fatal Cases of Angioneurotic Edema. C. E. Munger, New York.
9 Two Neurologic Cases in Pediatric Practice. M. A. Rabinowitz, Brooklyn.

5. **Chlorid of Sodium in Etiology of Neurasthenia.**—In Haig's opinion salt should be increased in every case of debility, marasmus, wasting disease, rheumatoid arthritis and chronic catarrh (intestinal and bronchial) and the effects on nutrition and the excretion of urea watched. He believes that those who do not make a habit of eating salt get a crave for it when the body is running short of chlorid, and that such crave should on no account be neglected. The same occurs to those who do not take enough salt or who sweep out with alkalies or potatoes more than they put in. People who make a habit of reading or working during meals, thus overlooking the taste of their food, are liable to neglect this crave and then serious results may follow. Whenever there are signs of a crave, Haig insists that salt should be taken and continued till chloridism is produced, and the time taken to do this should be noted.

It follows that not only will vegetables, potatoes and alkali sweep chlorid out of the body, but any condition that increases the alkalinity of the blood will do the same. Nearly all wasting diseases, such as chronic dyspepsia, vomiting, diarrhea, chronic pulmonary disease and chronic enteritis of all kinds will do this, hence the marasmus in children which follows so frequently on diarrhea, vomiting or any catarrhal trouble of the intestines or bronchi, may be due in part to sweeping of chlorid out of the body; and Haig has found, as a matter of fact, that very many of these cases have weak hearts due to defective muscular nutrition, and this still further interferes with nutrition and hinders recovery, *producing in children* conditions very closely parallel to neurasthenia in adults.

In his experience such marasmic children do very well and show a most gratifying increase in weight and strength if from ʒss to ʒi or more of chlorid of sodium is added to their food with a small dose of a heart tonic such as strophanthus. It is now his practice to administer chlorid of sodium to all children who are suffering from such troubles, and to use it as a routine treatment in convalescence from summer diarrhea and vomiting.

New York Medical Journal

June 6, XCIX, No. 23, pp. 1113-1164

10 Neurotic, Psychasthenic and Hysteric Children. J. P. C. Griffith, Philadelphia.
11 Abortive Treatment of Syphilis. B. Lapowski, New York.
12 Tuberculous Peritonitis. A. Judd, New York.
13 Decapsulation of Kidney. D. J. Lynch, Chicago.
14 Surgery in Modern Warfare. A. K. Yoosuf, Worcester, Mass.
15 Fracture of Lower End of Humerus. J. D. Whitall, Philadelphia.
16 Avulsion of Scalp. W. J. Gillette, Toledo, O.
17 Ulceration of Stomach and Duodenum from Medical Standpoint. A. F. Chace, New York.
18 Fatal Accidents Following Injection of Antimeningitis Serum. S. P. Kramer, Cincinnati.
19 *Predetermination of Sex. I. Bram, Philadelphia.

19. **Predetermination of Sex.**—Bram suggests that sex in offspring is the outcome of a contest between the spermatozoon and the ovum. If the spermatozoon is successful, the outcome is a male; if the ovum, the offspring is a female. This contest varies in one direction or the other by the influence of food. An excess of nourishment in the mother may decide in favor of a female, and a deficiency in the production of a male. Consequently, generous quantities of food with an excess of albuminous nitrogenous substances may decide at conception in favor of a baby girl, and a scanty diet with a very low proteid allowance in favor of a baby boy. Further sex is determined by the activity of the adrenal glands of the prospective mother. According to these theories if a boy is desired, treatment given by Bram is essentially dietary and medicinal, and is persisted in until the fourth or fifth month of pregnancy, when it may be discontinued. Albuminous, nitrogenous substances, such as eggs, meat, fish, cheese, etc., are forbidden; the diet consists essentially of such substances as cereals, fruits, potatoes, milk, buttermilk and butter. Plenty of water is insisted on to keep the kidneys active. In addition the patient is given after each meal a capsule consisting of two grains of the extract of suprarenal gland, combined with four grains of lecithin. Bram cites records of 30 patients in support of his claims.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Medical Chronicle, London

May, XXVII, No. 2, pp. 85-144

1 Leontiasis Ossea. E. D. Telford.
2 *Case of Circumscribed Ulceration of Thoracic Aorta, with Fatal Perforation into Left Lung and Pleura. P. R. Cooper.

2. **Ulceration of Thoracic Aorta.**—The history of Cooper's case is as follows: The patient was a muscular man, aged 45. Up to a few months previously he had always enjoyed good health. About that time he had an attack of "influenza." Since then he had been more or less ailing, complaining chiefly of pain in the left side, which is attributed to "indigestion." He continued at work despite the pain, which at times was very severe. He tried various remedies without benefit. When he consulted Cooper the pain in the left hypochondrium and epigastrium was severe and almost constant, although subject to exacerbation; it was also felt in the back—the upper dorsal region. The pain interfered with sleep, but did not seem to be affected by food. There was a general feeling of languor, and the patient was very easily tired. There was no definite evidence of indigestion. There was no complaint of any cardiac distress. There was no clinical evidence of syphilis or lead poisoning and no addiction to alcohol. Injury was denied, and there was no evidence of the lodgment of any foreign body in the esophagus. The only infectious disease traceable was an alleged attack of influenza shortly before the commencement of the symptoms. The question of diagnosis was difficult. Practically the only symptom was pain, and yet the appearance of suffering and extreme pallor pointed to some organic trouble.

The man was advised to give up work and keep under observation. Powders of codein and phenacetin were given to relieve the pain, and with these he was able to obtain sleep, take more food, and improved so much that of his own accord he went back to work within the week. While on his way to work one morning he collapsed in the street and brought up a large quantity of blood. He died almost immediately. Cooper made a post-mortem the next day. The whole of the left pleural cavity was filled with blood-clot, and at the upper and inner part the pleura and lung were adherent to each other, and to the side of the bodies of the fifth and sixth thoracic vertebra. It was through an aperture in this adherent part that the blood had evidently escaped directly from the aorta into the pleura. The aorta and esophagus were involved in the adhesion and a perforation existed in the aorta about 1 inch in diameter. This hole in the aorta was circular and had a well defined border. The rest of the lining of the aorta was fairly normal except for some superficial patches of atheroma. The sides of the bodies of the fifth and sixth dorsal vertebra were eroded opposite the perforation.

Sei-I-Kwai Medical Journal, Tokyo

May 10, XXXIII, No. 5, pp. 27-31

3 *Immediate Results of One Hundred and Sixteen Cases of Excised Carcinoma of Stomach. S. Miyake.
4 Value of Early Diagnosis in Treatment of Ileus. S. Asahara.
5 *Tuberculous Disease of Genito-Urinary Organs as Seen on Post-Mortem Examination. M. Uchimura.

3. **Results of Excised Carcinoma of Stomach.**—Of 116 of Miyake's cases 82 patients were cured and 34 died (29.2 per cent.). Complete excision was done in 2 cases; a wide excision (over 20 cm.) in 18 cases; excision of pancreas in 24 cases (head or part of body); excision of abdominal wall in 3 cases; excision of transverse colon in 5 cases. Of the two complete excisions, one was attended with complete success. The deaths were generally caused by acute peritonitis due to infection from degenerated ulcer of stomach.

5. **Tuberculosis of Genito-Urinary Organs.**—Uchimura examined 1,830 post-mortem descriptions and obtained 629 tuberculous cases. Of these 210 were suffering from either urinary or genital tuberculosis. The frequency of tuberculosis in the urinary organs was found to be in the following order: kidney, bladder, ureter, pelvis of kidney, urethra. Renal tuberculosis was found in 181 cases. Of these 39 were chronic. The pelvis was attacked in 31 cases and chiefly secondary to renal tuberculosis. Among 35 cases of ureteral tuberculosis the kidney escaped only in 1 case; therefore, Uchimura says, the enlargement of the ureter on palpation has diagnostic value in renal tuberculosis. There were 43 cases of bladder tuberculosis and only 4 escaped renal complication. The urethral tuberculosis numbered 6 cases. The frequency of disease in the male genital organs was in the following order—prostate, epididymis, spermatic cord, testicle. The penis was not affected even once. In the female genital organs, fallopian tube, body of uterus, ovary, cervix and vagina were affected in the order named. The external pubic region was never invaded.

Journal de Médecine de Bordeaux

May 17, LXXXV, No. 20, pp. 323-354

6 Pathogenesis and Treatment of Bubo Following Soft Chancre. (Bubon chancreux de l'aine.) W. Dubreuilh.
7 *Orthopedic Treatment of Infantile Paralysis. J. Gourdon.
8 Cancer of Intestine Simulating Appendicitis. L. Verdelet.

7. **Orthopedic Treatment of Infantile Paralysis.**—Gourdon gives an illustrated description of a number of cases of severe crippling from epidemic poliomyelitis in which great improvement followed the use of an orthopedic appliance. The functional improvement realized from exercising, when the orthopedic apparatus got the children up on their feet, was most striking. Surgical and physical measures are usually required also. Even when the crippling is so severe and of such long standing that there is little chance of the child's ever being able to walk freely, yet getting it on its feet by means of orthopedic appliances improves the circulation and spirits, and some control of muscles is regained when they are not already entirely degenerated.

When treatment is begun early and systematically much can be accomplished.

Presse Médicale, Paris

May 20, XXII, No. 40, pp. 381-388

9 *Comparison of Action of Arsenic and Iron in Anemia. C. Aubertin.

May 23, No. 41, pp. 389-400

10 *Liver Disease Revealed by Single Symptom. (Les insuffisances hépatiques monosymptomatiques.) P. Le Damany.
11 Freezing Point of the Gastric Contents. (La cryoscopie du contenu gastrique.) L. Meunier.

9. **Comparison of Action of Arsenic and Iron in Anemia.**—Aubertin gives curves from a number of cases of anemia of various types, all apparently showing that arsenic induces the production of new red blood-corpuscles while iron induces production of hemoglobin and favors its being taken up by the corpuscles. In some cases arsenic alone or iron alone may restore the blood to normal, but as a rule both are needed. He advises not to give them together, but successively, commencing with the one which seems to be most needed at the moment.

10. **Monosymptomatic Liver Disease.**—Le Damany reports a number of cases in which persons apparently quite healthy developed some single symptom, such as epistaxis, headache, delirium or convulsions, or a tendency to dropsy developed with practically intact cardiovascular system and kidneys, or the patient ran into a decline which there was nothing to explain except the previously unsuspected liver disease. The importance of recognizing that an otherwise latent liver affection may cause convulsions is evident as treatment for epilepsy is not appropriate in such cases; the liver should be attacked. Purpura is often the first manifestation of liver disease. The true diagnosis may be learned from palpation of the liver and estimation of the urea and urobilin in the urine, by alimentary glycosuria or elimination of methylene blue, excluding all other causes that might cause the symptom under consideration. Sometimes the above single symptoms may alternate or follow each other in turn; more often two or more are associated and then differentiation is easy.

Semaine Médicale, Paris

XXXIV, Nos. 20-21, pp. 229-252

12 *Abscess in the Uterus. (Pyométrie et abcès de l'utérus.) F. Lejars.
13 Tumors in the Central Abdomen. (Variété de tumeurs centro-abdominales.) F. Lejars.

12. **Abscess in the Uterus.**—Lejars classifies these abscesses as intracavitary and intraparietal. In two recent cases of genital prolapse requiring operative treatment the cervix orifice was obliterated, and when he made an opening in it a large quantity of pus escaped, an actual pyometra. Atrophy and retraction of the cervix may lead to this in elderly women, and the distention of the uterus by pus may suggest a tumor, until the pus may be spontaneously evacuated some day. The pus and a tumor may exist together. The pus from a pyometra may make its way into the peritoneum; Krull has reported a death from this cause. When the pus forms, with acute symptoms, after a childbirth or abortion the abscess is generally in the wall of the uterus. Mercadé in 1906 compiled forty-one cases of uterine abscesses, mostly post partum or post abortum but in some cases gonorrhea, traumatism or tuberculosis were the principal factors.

Berliner klinische Wochenschrift

May 25, LI, No. 21, pp. 965-1012

14 Position of Paresis and Tabes in Respect to Syphilis. (Stellung der progressiven Paralyse und Tabes zur Syphilis und die Frage ihrer Behandlung.) E. Meyer.
15 Forensic Medicine in the Curriculum. (Unterricht in der gerichtlichen Medizin.) F. Strassmann.
16 *Kidney Typhoid and Paratyphoid. (Nephroparatyphus und Nephrotyphus.) C. Klieneberger.
17 Influence of Food on the Growth. (Untersuchungen über die Beeinflussung des Wachstums durch die Ernährung.) H. Aron.
18 Functioning of the Internal Ear. (Ueber die Art der Labyrinthtätigkeit.) O. Goebel. Commenced in No. 20.

16. **Kidney Typhoid and Paratyphoid.**—Klieneberger states that in his two cases the urethra had probably become infected first with the paratyphoid bacilli and they had ascended and settled in the kidneys. The symptoms on the part of the urinary passages were so severe that one of the men was being treated on the assumption of gonorrhea until the paratyphoid bacilli were discovered. The patients came from rural districts and the bacilli cultivated from the urine resembled most closely the bacilli of hog cholera. The symptoms in the first case were those of an acute febrile affection with severe general symptoms suggesting typhoid and symptoms of nephritis, but not much enlargement of the spleen, and signs of slight catarrhal trouble in the lungs. The fever relapsed several times and there were repeated hemorrhages from skin, muscles and gums. In the second case a paratyphoid B infection of the urinary passages set in with fever but the general health was not much impaired at first and the clinical picture did not suggest typhoid. The nephritis persisted for months in both cases but finally seemed to heal completely. The bacilli could be cultivated from the urine for months but never from the blood or intestines. The fever was of an irregular, septic type and the patients did not regain complete health for several months. The bacilli in both were of the hog cholera group with certain adaptations to their hosts. The agglutination titer ran up to 1:327,680 and the blood picture was quite different from that with ordinary typhoid.

Deutsche medizinische Wochenschrift, Berlin

May 21, XL, No. 21, pp. 1041-1096

19 *Vomiting in Children. (Erbrechen im Kindesalter.) Tobler.
20 *Syphilitic Myocarditis. F. Rosenfeld.
21 *Pulmonary Embolism. Ulrichs.
22 Delivery without Memory of Labor Pains. (Schmerzlose Entbindungen im Dämmerschlaf unter Verwendung einer Vereinfachten Methode.) P. W. Siegel.
23 Treatment of Paralysis of the Arm. (Lähmungstherapie an der oberen Extremität.) O. Vulpius.
24 Walking Appliances with Painful Affections of the Legs. (Zur ambulanten Behandlung schmerzhafter Beinerkrankungen.) A. Schanz.
25 Differential Importance of Variation between the Temperature in Axilla and Pelvis. (Fieber und rektale Hyperthermie.) M. Engländer.
26 Combined Treatment of Cancer without the Knife. (Die unblutige Karzinombehandlung.) J. Allmann.
27 Metal Inlay Work and Lead Poisoning. (Tulaarbeit und Bleivergiftung.) D. Holtzmann and E. v. Skramlik.
28 Relations between Anaphylaxis, Urticaria and Parenteral Digestion of Protein. H. Mühsam and J. Jacobsohn.

19. **Vomiting in Children.**—Tobler remarks that the special excitability of the reflex system in children and the lack of inhibiting influences explain the ease with which vomiting is induced and point the way for treatment. Habitual and periodical vomiting are most frequently encountered in the children of the well-to-do. It is generally found that the child takes little but milk, and is constipated. The diet should be changed to leave out all fluid foods, and all efforts to coax the child to eat should be strictly interdicted. This generally succeeds unless the child is abnormally nervous. In this case, the psychology of the individual child must be studied, and his confidence won. The child must be given the impression that the vomiting is a harmless and trivial matter, not to be taken seriously by anyone in the family. Something special must be ordered to reenforce the therapeutic suggestion, and a glass of mineral water before meals is advisable for this purpose. If the family cannot be relied on, a change of environment may be necessary, best of all to a pediatric clinic.

The habitual morning vomiting of nervous schoolchildren has been best combated in his experience by having the child take breakfast in bed, and eat a little heartier lunch than usual. He advises for the periodical vomiting of neuropathic children to isolate the child at once and ensure absolute quiet and repose, possibly giving chloral or morphin to make the child sleep. The tormenting thirst is relieved by giving an alkaline mineral water ice-cold, a drop at a time, with a pipet. The odor of acetone in the breath at these times suggests that there may have been inadequate intake of carbohydrate in the food, so the diet should be regulated accordingly. If the stomach will not permit eating, the carbohydrate can be given by the rectum—several times a day a nutrient enema of 50 or 150 c.c. of gruel with 5 per cent. grape sugar and a few drops of tincture of opium. If the child can eat, the carbohydrates can be given by the mouth in as compact form as possible, lumps of sugar dipped in black coffee, dry chocolate, crackers, etc., thus tiding the child along until the ordinary food can be resumed. The fact that habitual vomiting is so much more frequent among breast than bottle babies, suggests that the fat in the milk is responsible for it. Tobler emphasizes, however, that the inadequate nourishment and cessation of growth in consequence of the repeated vomiting are less harmful for the infant—even when kept up for weeks—than severe derangement from an unfortunate change to bottle feeding or an unsuitable wet-nurse. Often restricting the amount of the feedings will answer the purpose. If not more than from 10 to 30 gm. are allowed in the twenty-four hours, and this is given fractioned and very slowly, ice-cold, the limit of tolerance can be determined even with stenosis of the pylorus, especially if swallowing of air is prevented.

Nutrient enemas may prove useful for infants; warm breast-milk, cautiously injected, not over 30 to 60 c.c. at a time, has proved the best for the purpose in his experience. Feeding through the duodenal-tube might also be considered. With obstinate spastic vomiting, it may prove necessary to deaden the sensitiveness of the stomach with some local anesthetic given in a weak solution with some acacia by the mouth. Local heat is always useful with spastic conditions in the stomach, and lavage is often of great service, even in acute cholera infantum. It is easy to introduce the moistened catheter (No. 22 or 24); all that is necessary besides is a rubber tube with funnel and glass interpiece.

20. **Syphilitic Myocarditis.** — A supposedly previously healthy young woman with a healthy child of 2 fainted twice, and the second time died, within twenty-four hours, conscious to the last but distressed and with subnormal temperature, pulse 136 to 178 and difficulty in breathing. The heart was dilated and the spleen enlarged. The diagnosis wavered between acute poisoning, terminal nephritis and embolism, but each could finally be excluded and necropsy revealed a syphilitic gumma in the heart. Rosenfeld compares this case with similar ones on record; in 15 of the 49 cases compiled by Stockmann the patients died suddenly and Huchard has found records of 35 with sudden death. In a number of others, as in the case here reported, several hours elapsed after the syncope before death occurred. In 9 of Stockmann's cases the patients died of an intercurrent disease and the gumma in the heart was a necropsy surprise. Differentiation of syphilitic myocarditis is difficult but Rosenfeld accomplished it in another case by heeding the coincidence of the very low blood-pressure and symptoms of mild angina pectoris with dilatation of the left ventricle and aorta, constantly irregular pulse and positive Wassermann. Salvarsan should be given only with extreme caution in such cases as this in itself has a tendency to reduce the blood-pressure and bring on tachycardia. But specific treatment of the syphilis is indispensable, supporting the heart and kidney functioning. Improvement in general health and increase in weight testify that our measures are meeting with success.

21. **Pulmonary Embolism.**—This communication analyzes 18 cases in connection with 22 previously reported by Busch from the same hospital, the aim being to learn if there is a chance for operative measures to succeed in cases of pulmonary embolism. In a fourth of all the above cases death occurred instantaneously; in the others ten minutes or more intervened. The anatomic findings in only 5 of the cases showed that the embolus might possibly have been removed, but 3 of these patients died instantaneously or were too weak for any operation. Two of the 18 in the last series recovered spontaneously. Both were elderly and debilitated and the symptoms were severe at first. Two patients were operated on by Trendelenburg's technic but necropsy showed that the embolism was too extensive for operative relief, both sides being involved. An operation has been done to extract the embolus in 13 cases, but no patient has been saved by it; in Kruger's case in 1909 the patient lived for over five days, succumbing then to secondary infection.

Medizinische Klinik, Berlin

May 31, X, No. 22, pp. 919-960 and Supplement

29 Hydrotherapy and Infectious Diseases. L. Brieger.
30 The Appendix in Connection with Disease of the Genital Apparatus. J. Fabricius. Commenced in No. 21.
31 Ways and Means for Ensuring Dietetic Measures at Health Resorts. (Massnahmen zur Durchführung einer rationellen Diat in den Kurorten.) H. Strauss.
32 *Friedmann's Remedy for Tuberculosis. (Ueber Kaltblütertuberkulose und das Friedmannsche Heilmittel gegen menschliche Tuberkulose.) Windrath.
33 *Impeded Breathing Through the Nose and Pulmonary Tuberculosis. G. Wotzilka.
34 *Simulation of Acetonuria. (Vortäuschung von Acetonurie.) Placzek.
35 Serotherapy of Scarlet Fever. (Ist Normalmenschenserum bei der Behandlung von Scharlach durch Normalpferdeserum ersetzbar?) F. Prinzing.
36 Saline Mineral Waters in Treatment of Stomach Disease. (Genuss der Kochsalzquellen bei Magenkrankheiten.) J. Berger.
37 Inexpensive Plaster Walking Cast. (Wohlfeiler Gipsgehverband bei Unterschenkel- und Fussverletzungen. A. Drott.
38 The Causal Problem in Medicine. (Kritik des Konditionalismus.) F. Martius.

32. **Friedmann's Remedy for Tuberculosis.**—Windrath is physician in chief to the sanatorium at Beringhaisen, and he states that he applied the Friedmann remedy in twenty-three cases of pulmonary tuberculosis of various stages, with no benefit according to the Friedmann sense "subsidence of toxic symptoms (stitches in the chest, headache, palpitation of the heart, night sweats, fever and cough) and clearing up of the part of the lung involved." In one case an acute aggravation of the disease followed the Friedmann treatment, to which the patient succumbed in a few days. He examined the remedy bacteriologically in some instances and twice found it contaminated with staphylococci. His final conclusion is that he warns against the use of the Friedmann remedy in pulmonary tuberculosis irrespective of the stage of the disease.

33. **Nose Breathing and Pulmonary Tuberculosis.**—Wotzilka has been investigating whether nasal affections are more common among persons with pulmonary tuberculosis than in others. Questions as to whether the individual had always been able to breathe normally through the nose elicited misleading replies, many saying that they had always breathed properly when the passages were found much obstructed. Examination of 67 tuberculous men and 33 tuberculous women disclosed that 45 were unable to breathe normally through the nose, while among 48 non-tuberculous men and 52 non-tuberculous women only 13 of the 100 were unable to breathe normally. This preponderance of 45 per cent. over 13 per cent. among the non-tuberculous is certainly a striking coincidence. The causes of the obstruction were deviation of the septum, hyperplasia in nose or throat, ozena or rhinitis with atrophy. Care to keep the nasal passages and the throat normally permeable may prove important in prophylaxis of pulmonary tuberculosis and may aid in recovery. Especially in the incipient stages every effort must be made to promote the respiration in every way.

34. **Acetonuria Simulated by Malingerer.**—The case is reported of a man who had insured himself in three companies against accident and soon after had his right hand crushed in a machine, and Binswanger found 0.5 per cent. sugar in the urine and acetonuria. As years passed the man seemed to thrive and take on flesh notwithstanding his supposed diabetes and acetonuria. It was finally found that he was in the habit of taking 4 gm. of aspirin every evening when medical examinations were on the tapis. This adds another to the long list of malingerers' tricks.

Münchener medizinische Wochenschrift

May 19, LXI, No. 20, pp. 1097-1152

39 Surface Tension of Serum and Cerebrospinal Fluid. (Die Oberflachenspannung von Serum und Liquor cerebrospinalis beim Menschen; Technik kapillarimetrischer Messungen.) B. Kisch and O. Remertz.
40 Peptolytic Ferments in Serum after Scalding Injuries. (Auftreten peptolytischer Fermente im Serum verbrühter Kaninchen.) H. Pfeiffer.
41 Experimental Research with Salvarsanized Serum. A. Stühmer.
42 *Tuberculosis of the Retina. (Zur Tuberkulose der Netzhaut.) H. Oloff.
43 *Skin Test for Tabes. (Neues Symptom bei der Tabes.) H. v. Baeyer.
44 *Mesenteric Venous Thrombosis. S. Weil.
45 Exclusion of the Pylorus. (Zur Technik der Pylorusausschaltung beim Ulcus ventriculi.) A. Brüning.
46 Mesothorium Treatment in Gynecologic Cases. G. Keil.
47 *Skin Reaction in Pregnancy. (Neue Hautreaktion in der Schwangerschaft.) P. Esch.
48 *Examination of Gall-Bladders after Cholecystectomy to Discover Chronic Typhoid-Bacilli Carriers. (Feststellung von Typhusbazillendauerträgern durch Untersuchung des bei Operationen gewonnenen Gallenblaseninhalts.) O. Mayer.
49 *Bands of Nephritis after Exophthalmic Goiter. L. Huismans.
50 Treatment of Phimosis. O. Loewe.
51 Improved Technic for the Nylander Test for Sugar. (Zur Nylanderschen Zuckerprobe.) Mende.
52 Protein Requirement and Meat in the Diet. (Eiweissbedarf und Fleischnahrung.) K. Kisskalt.

42. **Tuberculosis of the Retina.**—Oloff's two patients were robust sailors and the retinal tuberculous process was primary and isolated in each. He was able to watch the effect on the process of injection of tuberculin, and found it so deleterious that he had to give up the idea of tuberculin treatment. Tuberculous processes of this kind display a marked tendency to retrogress under general dietetic and hygienic measures. Tuberculous processes in the eyes are common at Kiel, where he practices, but not in the form of an affection of the retinal veins as in these cases. They are generally more of a periphlebitis or tumor-like focus.

43. **Sign of Tabes.**—Baeyer calls attention to the abnormal perception in tabetic ataxia of the sensations in the skin when the skin is pressed with the finger and pushed in various directions or a fold is taken up in the fingers and pulled up or down or sideways. A healthy person can always tell in which direction the movements are made, but the tabetic is frequently or constantly mistaken in his perception of the movements. This may occur regularly when surface sensations, like the touch of cotton, are correctly estimated. The derangement probably involves the deep sensitiveness and may prove an aid in diagnosis.

44. **Mesenteric Thombosis.**—Weil emphasizes the great difference in the outlook and indications for treatment as the thrombosis in the mesenteric veins is ascending or descending. With the ascending type, the main trunk of the portal vein is not involved; the trouble is a radicular thrombosis in the portal region. In the other case—the descending type—the portal trunk becomes thrombosed first and symptoms of stasis in the portal system dominate the clinical picture; the spleen enlarges, ascites follows and the veins in the abdominal wall become dilated. The symptoms from the infarct in the intestine may be so stormy that they may mask the portal symptoms unless the latter are sought for with care. Two cases are reported in detail, one of each type. The first was in a woman of 52 with symptoms suggesting collapse from ileus, the spleen not enlarged, the abdomen soft. The operation revealed ascending mesenteric thrombosis and prompt recovery followed resection of the endangered intestine and mesentery. The second patient was a man of 62; the portal vein had become obstructed first and resection of the intestinal infarct naturally had no effect on the portal thrombus. The operation was done on the diagnosis of acute ileus, but the patient died the same day. The spleen was enlarged, the abdomen distended. The first case is the nineteenth on record in which mesenteric thrombosis was cured by an operation. No case of operative recovery is known when the portal vein was the primary seat of the thrombosis. If the spleen is large, there is not much chance of recovery unless the portal vein is opened and the thrombus extracted.

47. **Placentin Reaction in Pregnancy.**—Esch states that he applied juice expressed from placentas to sixteen pregnant and sixteen non-pregnant women according to the usual tuberculin technic and found that all reacted positively. The only difference was that the reaction was much more pronounced in the pregnant women than in the non-pregnant, with the exception of four of the latter whose reaction was on a par with that of the pregnant women.

48. **Typhoid Bacilli Found in Gall-Bladders Removed for Disease.**—Mayer found typhoid bacilli in six of seventy gallbladders that had been removed for various reasons. Paratyphoid bacilli were found in another, thus bringing to 7 per cent. the cases with positive findings, indicating a chronic bacilli carrier. In his district, Landau, there are already ninety-five chronic carriers under constant supervision, and the above six will have to be added to the list as the records show that removal of the gall-bladder does not always put an end once for all to elimination of typhoid bacilli, although it may help for a time.

49. **Death after Operation for Exophthalmic Goiter.**—Huismans' patient was a woman of 33 with exophthalmic goiter which had gradually developed from a puberty goiter. She had borne three children and the urine was free from sugar and albumin, but she had suffered for some time from a sense of oppression in the chest. The right lobe of the thyroid and part of the left was removed, and she died the eighteenth hour. The thymus and spleen were very large and strips of acute inflammation were found in the kidneys—all testifying, he says, to pluriglandular intoxication. He suggests that thyroid treatment should be given after thyroidectomy; since he has made a practice of this he has had no more mishaps of the kind (since 1910).

Riforma Medica, Naples

XXX, Nos. 19-20, pp. 505-560

53 No Influence from Hypophysis Extract on Healing of Fractures. G. Marsiglia.
54 *Lime Salts Filling for Cavity in Bone. (Nuovo metodo di impiombatura delle ossa con i sali di calce.) V. Marcozzi.
55 Traumatic Rupture of the Bladder; Recovery. P. L. Della Torre.
56 Hernia of the Appendix Vermiformis. G. Lionti. Commenced in No. 19.

54. **Lime Salts for Filling Cavities in Bones.**—Marcozzi expatiates on the advantages of the method of filling up a cavity in bone with material which will not act as a culture medium or as a foreign body, and which is gradually absorbed. The Mosetig filling for the purpose is a mixture of 60 parts iodoform, 40 parts spermaceti and 40 parts oil of sesame, but Marcozzi thinks the iodoform can be dispensed with—cases of poisoning are known from its use—while the spermaceti and oil are of no direct help in bone repair. He remarks that Senn came nearer to the ideal in his suggestion to use decalcified bone, but—strange to say—he discarded the very substance, the lime, which is most needed for bone repair. Marcozzi reports considerable experimental research and one clinical experience which have demonstrated, he asserts, the feasibility and great superiority of using lime salts to fill the bone cavity, thus supplying the bone directly with the elements it needs to produce new bone. He uses a mixture of equal parts of calcium carbonate and phosphate, sterilized by dry heat or by adding water and boiling until all is evaporated. The cavity is first lightly touched with tincture of iodin, and then the friable lime mixture is smoothed out with a Wolkmann spoon and shoveled into the cavity where it serves at once to arrest all bleeding. It is not absorbed so promptly as some substances, which is a further advantage, while the fact that it is all finally absorbed is a great improvement over any substance which is left in the cavity as a foreign body.

Hygiea, Stockholm

LXXVI, No. 9, pp. 513-560

57 Protecting Rôle of Bacillus Bifidus against Alien Microbes in Infant Intestine. (Om Bacillus bifidus' fysiologiska betydelse i tarmkanalen hos spädbarnet.) C. A. Kling.
58 Reinfection with Syphilis not an Absolute Sign of Previous Cure. (Till frågan om syfilitisk reinfektion—superinfektion.) C. G. Ahman.

JOURNALS INDEXED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, JANUARY-JUNE, 1914

The following journals have been indexed in the Current Literature Department of THE JOURNAL during the past six months. Any of the foreign journals, except those starred, will be lent by THE JOURNAL to subscribers in the United States and to Fellows of the American Medical Association for a period not exceeding three days. Only one journal may be borrowed at a time. Requests for periodicals should be addressed to the Library of the American Medical Association and six cents in stamps should be enclosed. This covers the average expense of mailing a journal. Domestic journals can be obtained by sending the approximate amount direct to the respective publishers. Thus most of the journals indexed are accessible to the general practitioner, no matter where he may be located.

Albany Medical Annals. M. $2. 170 Washington Ave., Albany, N. Y.
American Journal of Anatomy. Bi-m. $5. 36th St. and Woodland Ave., Philadelphia.
American Journal of Diseases of Children. M. $3. American Medical Association, 535 N. Dearborn St., Chicago.
American Journal of Insanity. Q. $5. Johns Hopkins Press, Baltimore.
American Journal of the Medical Sciences. M. $5. Lea & Febiger, 706 Sansom St., Philadelphia.
American Journal of Obstetrics and Diseases of Women and Children. M. $5. Wood & Co., 51 5th Ave., New York City.
American Journal of Orthopedic Surgery. Q. $3. P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia.
American Journal of Physiology. M. $5.50. Box 127, Back Bay P. O., Boston.
American Journal of Public Health. M. $3. 755 Boylston St., Boston.
American Journal of Roentgenology. M. $5. 32 Adams Ave., West, Detroit.
American Journal of Tropical Diseases and Preventive Medicine. M. $2. P. O. Drawer 602, New Orleans, La.
Annales de gynécologie et d'obstétrique. M. 22 francs. Paris.
Annales de médecine et chirurgie infantiles. Semi-m. 12 francs. Paris.
Annals of Ophthalmology. Q. $4. Mermod-Jaccard Bldg., St. Louis.
Annals of Otology, Rhinology and Laryngology. Q. $4. Mermod-Jaccard Bldg., St. Louis.
Annals of Surgery. M. $5. J. B. Lippincott Co., E. Washington Square, Philadelphia.
Annals of Tropical Medicine and Parasitology. Q. $5. Liverpool.
Archiv für Gynäkologie. Irregular. Price varies. Berlin.
Archiv für Kinderheilkunde. Irregular. 15 marks. Stuttgart.
Archiv für klinische Chirurgie. Irregular. Price varies. Berlin.
Archiv für Verdauungs-Krankheiten. Bi-m. 24 marks. Berlin.
Archives des Sciences Biologiques. Irreg. 9 rubles. St. Petersburg.
Archives générales de chirurgie. M. 26 francs. Paris.
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This is an index not only to the reading matter in THE JOURNAL, but also to original articles in the principal medical periodicals of this and other countries. The reading matter appearing in THE JOURNAL is distinguished by the use of **black-faced numerals.**

The letters used to explain in which department the matter indexed appears are as follows: "E," Editorial; "C," Correspondence; "T," Therapeutics; "Ml," Medicolegal; "P," Propaganda for Reform; "ME," Medical Economics; "ab," abstract; the star (*) indicates an "Original Article" in THE JOURNAL.

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ABDERHALDEN and Fauser's reaction in dementia praecox, ***1701***

This reference is to an original article in THE JOURNAL, as shown both by the star and by the black-faced numerals indicating the page.

ACID, acetyl-salicylic, effect of addiction to, ***797***

This reference, as indicated by the black-faced figures, is also in THE JOURNAL, and on turning to page 797 we find an answer to a question in the Department of Queries and Minor Notes.

ABSCESS, cerebellar, *symptom of,* (91) ***1764***

In this reference, the (91) indicates that the article is in the Current Literature Department and the fact that the page number is in black-faced type shows that the article is abstracted and discussed in THE JOURNAL. Turning to page 1764, we find (91) refers to an article by M. Mann in the *Münchener medizinische Wochenschrift,* April 21.

ADENOMAS, multiple, and etiology of prostate enlargement, (121) 573

The fact that in this last reference the page is given in ordinary type indicates that only the title of the article is given. Turning to page 573 we find that the numeral (121) refers to a paper on that subject by J. A. Gardner and B. T. Simpson which appeared in *Surgery, Gynecology and Obstetrics,* January.

In the AUTHOR'S INDEX are the names of the authors of articles which have appeared in THE JOURNAL of the American Medical Association and of articles that have been listed from week to week in the Department of Current Medical Literature as having appeared in other journals. The black-faced numerals indicate that the article is in THE JOURNAL, either in full or in abstract. The star (*) preceding the page number, indicates an original article.

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This is an index not only to the reading matter in The Journal, but also to original articles in the principal medical periodicals of this and other countries. The reading matter appearing in The Journal is distinguished by the use of **black-faced numerals.**

The letters used to explain in which department the matter indexed appears are as follows: "E," Editorial; "C," Correspondence; "T," Therapeutics; "Ml," Medicolegal; "P," Propaganda for Reform; "ME," Medical Economics; "ab," abstract; the star (*) indicates an "Original Article" in The Journal.

This is a subject index and one should, therefore, look for the chief word, with the following exceptions: "Deaths" and "Society Proceedings" are indexed under these titles at the end of the letters "D" and "S." Matter pertaining to the Association is indexed under "American Medical Association."

All matter is indexed under the most important word of the heading used in The Journal, and also under the subject heading. For instance, abscess of the brain will be found under "abscess," as well as under "brain." Such titles as "ocular manifestations, etc." have been indexed under "Eye." Cross references have been liberally used.

The figures in parentheses refer to the paragraph, the number following to the page in The Journal.

> ABDERHALDEN and Fauser's reaction in dementia praecox, *1701

This reference is to an original article in The Journal, as shown both by the star and by the black-faced numerals indicating the page.

> ACID, acetyl-salicylic, effect of addiction to, 797

This reference, as indicated by the black-faced figures, is also in The Journal, and on turning to page 797 we find an answer to a question in the Department of Queries and Minor Notes.

> ABSCESS, cerebellar, symptom of, (91) 1764

In this reference, the (91) indicates that the article is in the Current Literature Department and the fact that the page number is in black-faced type shows that the article is abstracted and discussed in The Journal. Turning to page 1764, we find (91) refers to an article by M. Mann in the *Münchener medizinische Wochenschrift,* April 21.

> ADENOMAS, multiple, and etiology of prostate enlargement, (121) 573

The fact that in this last reference the page is given in ordinary type indicates that only the title of the article is given. Turning to page 573 we find that the numeral (121) refers to a paper on that subject by J. A. Gardner and B. T. Simpson which appeared in *Surgery, Gynecology and Obstetrics,* January.

In the Author's Index are the names of the authors of articles which have appeared in The Journal of the American Medical Association and of articles that have been listed from week to week in the Department of Current Medical Literature as having appeared in other journals. The black-faced numerals indicate that the article is in The Journal, either in full or in abstract. The star (*) preceding the page number, indicates an original article.

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